SCIENCE AND ENGINEERING PROFILES

In addition to the state R&D statistics summarized above, the state profiles listed in this report contain other data (from both NSF and non-NSF sources) relating to economic activity within each State in 52 one-page S&E profiles (including ones for the District of Columbia and Puerto Rico). NSF survey indicators include numbers of doctoral scientists and engineers, doctorate degrees awarded by major science and engineering (S&E) field,[8] S&E graduate students and postdoctorates, amounts of Federal R&D obligations by agency and performer, total and industrial R&D expenditures, and academic R&D expenditures by major S&E field. Indicators from non-NSF sources include population, civilian labor force, per capita personal income, total Federal expenditures (not just on R&D), higher education expenditures, patents, small business innovation research (SBIR) awards, and GSP by originating economic sectors. In these profiles, State rankings and totals are provided for the 50 States, the District of Columbia, and Puerto Rico. Because data on total and industrial R&D expenditures are not available for Puerto Rico, rankings for those two variables exclude Puerto Rico.

Of the 17 main indicators ranked by State in the profiles (excluding the rankings in the bottom half of each profile involving Federal R&D obligations by State and performer), California ranked first in each except in personal income per capita, where it ranked 13th. New York ranked second in eight of the indicators and ranked no lower than 8th in the others. Michigan ranked second in total R&D performance and second in industry R&D, but ranked between sixth and twenty-first in the other indicators. Texas ranked between second and seventh in all of the 17 indicators, with the exception of personal income per capita, where it ranked twenty-sixth.

In this report, when States are ranked by a particular statistic, two or more States may have the same value for that statistic. When such ties occur, the tied States are given the same rank, and the next lowest State is given a rank equal to the number of higher ranked States plus one. For example, if two States are tied for 27th place, they both receive a rank of "27," no State is given a rank of "28," and the next lowest State is given a rank of "29."[9]

For many survey statistics used in this report, some fraction of the survey totals could not be allocated to specific geographic regions, or were for U.S. areas other than the 52 listed in this report (e.g., territories). Consequently, U.S. totals reported here may differ from those reported in the underlying surveys.[10] Also, because of rounding, the sum of the gross State product sector percentages may not equal 100 percent.

For some States, reported levels of R&D expenditures and levels of doctoral scientists and engineers are relatively small. For these cases, sampling error in the surveys associated with these statistics may have bearing on the precision of these data, including State rankings. Particular caution in this regard should be used in comparisons among States with low levels of doctoral scientists and doctoral engineers. For example, South Dakota is ranked lowest in doctoral engineers with an estimated number of 103 in the State, and Wyoming is the next to lowest, with 108. However, according to the survey of doctorate recipients from which these data were obtained, any estimate of 100 doctoral engineers is subject to a standard error of 50,

[8] "Environmental Sciences" for S&E doctorate degree data are the sum of earth, atmospheric, and ocean sciences. "Life Sciences" for S&E doctorate degree data were defined as including both biological and agricultural sciences. Medical or health-related data are collected but non-S&E health fields are excluded.

[9] Such ties are only treated as such when there are no numberical differences between any two statistics. Alternatively, ties could have also been identified whenever two numbers differ from each other, but by an amount that is not statistically significant. If this other definition had been applied, then many more ties would have been found.

[10] For two variables—personal income per capita and gross State product—the data sources for Puerto Rico differ from those used to obtain State data.

implying that the difference between these two States for this variable is not statistically significant.[11] For 1,000 doctoral engineers, there is a standard error of 150. For doctoral scientists, the standard error for 100 scientists is 40**,** and for 1,000 scientists it is 140. Readers should consult with the original sources of these data, as listed below, for additional information on standard errors associated with these and other statistics reported.

For information about *State Science and Engineering Profiles and R&D Patterns: 1997-98*, please contact:

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[11] See "Methodological Report of the 1997 Survey of Doctorate Recipients," National Opinion Research Corporation, March 1999.

Alabama

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	6,127	483,162	26	Total R&D performance, 1997 (millions)	$1,637	$199,110	25
Doctoral engineers, 1997[1]	1,325	97,075	23	Industry R&D, 1997 (millions)	$589	$150,329	34
S&E doctorates awarded, 1998[1]	345	27,272	24	Academic R&D, 1997 (millions)	$369	$23,740	22
of which, in life sciences	31%	25%		of which, in life sciences	68%	56%	
in engineering	25%	22%		in engineering	13%	16%	
in psychology	14%	13%		in physical sciences	6%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	388	37,928	25	expenditures, 1996 (millions)	$3,045	$189,626	21
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	596	35,413	17
in doctorate-granting institutions	6,622	424,650	22	Patents issued to State residents, 1998	366	80,287	33
Population, 1998 (000s)	4,352	274,153	23	Gross State product, 1997 (billions)	$103	$8,152	25
Civilian labor force, 1998 (000s)	2,153	139,125	23	of which, agriculture	2%	2%	
				manufacturing, mining, construction	27%	23%	
Personal income per capita, 1998	$21,442	$26,412	41	transportation, communication, utilities	9%	8%	
				wholesale and retail trade	17%	16%	
Federal spending				finance, insurance, real estate	13%	19%	
Total expenditures, 1998 (millions)	$25,297	$1,453,884	19	services	17%	20%	
R&D obligations, 1997 (millions)	$2,214	$68,424	10	government	15%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	2,213,683	660,047	0	1,319,237	214,457	18,996	946	10
Department of Agriculture	16,323	4,749	0	0	11,509	0	65	32
Department of Commerce	1,478	621	0	80	495	282	0	36
Department of Defense	1,295,372	350,480	0	929,554	13,757	1,581	0	7
Department of Energy	34,848	75	0	21,767	12,756	250	0	20
Department of Health & Human Services	149,266	139	0	1,777	132,796	14,533	21	21
Department of Interior	5,126	4,432	0	527	167	0	0	32
Department of Transportation	1,581	0	0	808	0	0	773	31
Environmental Protection Agency	1,733	0	0	0	1,545	188	0	30
National Aeronautics & Space Admin	697,986	299,551	0	364,173	32,327	1,848	87	5
National Science Foundation	9,970	0	0	551	9,105	314	0	39
State rank, total	10	6	na	7	19	21	39	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Alaska

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	1,151	483,162	49	Total R&D performance, 1997 (millions)	$136	$199,110	48
Doctoral engineers, 1997[1]	165	97,075	48	Industry R&D, 1997 (millions)	$24	$150,329	51
S&E doctorates awarded, 1998[1]	32	27,272	51	Academic R&D, 1997 (millions)	$71	$23,740	43
of which, in life sciences	50%	25%		of which, in environmental sciences	44%	6%	
in environmental sciences	22%	3%		in life sciences	26%	56%	
in physical sciences	16%	14%		in physical sciences	19%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	13	37,928	51	expenditures, 1996 (millions)	$371	$189,626	50
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	18	35,413	50
in doctorate-granting institutions	571	424,650	52	Patents issued to State residents, 1998	63	80,287	49
Population, 1998 (000s)	614	274,153	49	Gross State product, 1997 (billions)	$25	$8,152	47
Civilian labor force, 1998 (000s)	317	139,125	50	of which, agriculture	1%	2%	
				manufacturing, mining, construction	30%	23%	
Personal income per capita, 1998	$25,675	$26,412	21	transportation, communication, utilities	16%	8%	
				wholesale and retail trade	10%	16%	
Federal spending				finance, insurance, real estate	11%	19%	
Total expenditures, 1998 (millions)	$4,767	$1,453,884	47	services	12%	20%	
R&D obligations, 1997 (millions)	$100	$68,424	41	government	20%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	99,928	38,381	0	14,893	29,731	2,421	14,502	41
Department of Agriculture	6,989	5,053	0	0	1,891	45	0	43
Department of Commerce	20,280	16,970	0	0	2,860	450	0	12
Department of Defense	28,373	2,257	0	11,973	457	0	13,686	37
Department of Energy	0	0	0	0	0	0	0	na
Department. of Health & Human Services	2,600	329	0	15	1,949	0	307	50
Department of Interior	17,656	13,639	0	2,707	1,271	39	0	5
Department of Transportation	515	0	0	6	0	0	509	46
Environmental Protection Agency	80	0	0	0	80	0	0	49
National Aeronautics & Space Admin	14,096	133	0	0	13,182	781	0	27
National Science Foundation	9,339	0	0	192	8,041	1,106	0	42
State rank, total	41	35	na	41	44	42	2	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Arizona

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	5,634	483,162	27	Total R&D performance, 1997 (millions)	$2,410	$199,110	21
Doctoral engineers, 1997[1]	1,816	97,075	16	Industry R&D, 1997 (millions)	$1,854	$150,329	17
S&E doctorates awarded, 1998[1]	486	27,272	18	Academic R&D, 1997 (millions)	$377	$23,740	21
of which, in life sciences	22%	25%		of which, in life sciences	42%	56%	
in engineering	21%	22%		in physical sciences	27%	10%	
in social sciences	17%	15%		in engineering	14%	16%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	446	37,928	24	expenditures, 1996 (millions)	$2,109	$189,626	30
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	614	35,413	16
in doctorate-granting institutions	7,231	424,650	19	Patents issued to State residents, 1998	1,514	80,287	17
Population, 1998 (000s)	4,669	274,153	21	Gross State product, 1997 (billions)	$121	$8,152	24
Civilian labor force, 1998 (000s)	2,272	139,125	21	of which, agriculture	2%	2%	
				manufacturing, mining, construction	21%	23%	
Personal income per capita, 1998	$23,060	$26,412	36	transportation, communication, utilities	7%	8%	
				wholesale and retail trade	17%	16%	
Federal spending				finance, insurance, real estate	19%	19%	
Total expenditures, 1998 (millions)	$24,067	$1,453,884	20	services	21%	20%	
R&D obligations, 1997 (millions)	$732	$68,424	22	government	12%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	732,065	143,601	33,264	397,840	148,571	6,366	2,423	22
Department of Agriculture	21,312	13,830	0	6	7,408	56	12	24
Department of Commerce	700	43	0	0	530	0	127	40
Department of Defense	509,668	119,236	0	371,577	18,828	16	11	17
Department of Energy	3,546	0	0	0	3,546	0	0	38
Department of Health & Human Services	71,280	44	0	2,344	63,339	4,262	1,291	28
Department of Interior	6,611	6,332	0	28	251	0	0	24
Department of Transportation	913	0	0	161	216	0	536	38
Environmental Protection Agency	2,150	0	0	597	1,553	0	0	28
National Aeronautics & Space Admin	47,927	4,116	0	21,255	20,349	1,761	446	17
National Science Foundation	67,958	0	33,264	1,872	32,551	271	0	10
State rank, total	22	19	13	17	26	32	26	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Arkansas

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	2,296	483,162	40	Total R&D performance, 1997 (millions)	$272	$199,110	45
Doctoral engineers, 1997[1]	336	97,075	43	Industry R&D, 1997 (millions)	$118	$150,329	42
S&E doctorates awarded, 1998[1]	77	27,272	42	Academic R&D, 1997 (millions)	$102	$23,740	40
of which, in life sciences	58%	25%		of which, in life sciences	78%	56%	
in physical sciences	17%	14%		in engineering	9%	16%	
in engineering	14%	22%		in physical sciences	5%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	92	37,928	39	expenditures, 1996 (millions)	$1,303	$189,626	37
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	31	35,413	46
in doctorate-granting institutions	1,453	424,650	44	Patents issued to State residents, 1998	144	80,287	43
Population, 1998 (000s)	2,538	274,153	34	Gross State product, 1997 (billions)	$59	$8,152	32
Civilian labor force, 1998 (000s)	1,215	139,125	34	of which, agriculture	5%	2%	
				manufacturing, mining, construction	29%	23%	
Personal income per capita, 1998	$20,346	$26,412	47	transportation, communication, utilities	10%	8%	
				wholesale and retail trade	17%	16%	
Federal spending				finance, insurance, real estate	12%	19%	
Total expenditures, 1998 (millions)	$13,016	$1,453,884	34	services	15%	20%	
R&D obligations, 1997 (millions)	$96	$68,424	42	government	12%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	95,709	49,469	0	5,782	37,509	2,030	919	42
Department of Agriculture	23,559	11,213	0	0	12,317	5	24	20
Department of Commerce	300	0	0	0	0	0	300	47
Department of Defense	9,313	2,517	0	4,755	2,041	0	0	47
Department of Energy	22	0	0	22	0	0	0	51
Department of Health & Human Services	52,901	31,797	0	898	18,181	2,025	0	30
Department of Interior	4,060	3,942	0	3	115	0	0	37
Department of Transportation	620	0	0	25	0	0	595	42
Environmental Protection Agency	732	0	0	0	732	0	0	38
National Aeronautics & Space Admin	350	0	0	0	350	0	0	52
National Science Foundation	3,852	0	0	79	3,773	0	0	50
State rank, total	42	30	na	48	41	45	40	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

California

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	62,065	483,162	1	Total R&D performance, 1997 (millions)	$41,670	$199,110	1
Doctoral engineers, 1997[1]	16,845	97,075	1	Industry R&D, 1997 (millions)	$34,011	$150,329	1
S&E doctorates awarded, 1998[1]	3,397	27,272	1	Academic R&D, 1997 (millions)	$2,979	$23,740	1
of which, in engineering	22%	22%		of which, in life sciences	56%	56%	
in life sciences	21%	25%		in engineering	15%	16%	
in psychology	17%	13%		in physical sciences	13%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	6,996	37,928	1	expenditures, 1996 (millions)	$21,514	$189,626	1
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	7,892	35,413	1
in doctorate-granting institutions	43,216	424,650	1	Patents issued to State residents, 1998	15,793	80,287	1
Population, 1998 (000s)	32,667	274,153	1	Gross State product, 1997 (billions)	$1,033	$8,152	1
Civilian labor force, 1998 (000s)	16,329	139,125	1	of which, agriculture	2%	2%	
				manufacturing, mining, construction	18%	23%	
Personal income per capita, 1998	$27,503	$26,412	13	transportation, communication, utilities	7%	8%	
				wholesale and retail trade	16%	16%	
Federal spending				finance, insurance, real estate	23%	19%	
Total expenditures, 1998 (millions)	$161,571	$1,453,884	1	services	23%	20%	
R&D obligations, 1997 (millions)	$13,731	$68,424	1	government	11%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	13,731,238	1,454,133	2,237,895	7,816,020	1,743,099	473,915	6,176	1
Department of Agriculture	77,948	54,422	0	429	22,485	502	110	3
Department of Commerce	72,647	17,104	0	46,744	7,309	1,490	0	3
Department of Defense	8,170,552	1,065,288	244,547	6,608,286	222,249	30,033	149	1
Department of Energy	1,031,311	8,199	858,618	63,580	85,156	15,758	0	2
Department of Health & Human Services	1,391,314	3,928	30,756	74,465	956,680	323,753	1,732	2
Department of Interior	44,704	41,226	0	571	2,518	243	146	3
Department of Transportation	25,372	5,237	0	11,723	3,374	1,467	3,571	6
Environmental Protection Agency	2,291	0	0	0	1,900	391	0	26
National Aeronautics & Space Admin	2,594,307	258,526	1,103,426	985,825	165,692	80,593	245	1
National Science Foundation	320,792	203	548	24,397	275,736	19,685	223	1
State rank, total	1	4	1	1	1	2	8	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Colorado

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	10,488	483,162	16	Total R&D performance, 1997 (millions)	$3,205	$199,110	17
Doctoral engineers, 1997[1]	1,785	97,075	17	Industry R&D, 1997 (millions)	$2,248	$150,329	16
S&E doctorates awarded, 1998[1]	533	27,272	17	Academic R&D, 1997 (millions)	$427	$23,740	18
of which, in engineering	24%	22%		of which, in life sciences	47%	56%	
in life sciences	23%	25%		in engineering	15%	16%	
in physical sciences	14%	14%		in environmental sciences	14%	6%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	893	37,928	13	expenditures, 1996 (millions)	$2,345	$189,626	26
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	1,390	35,413	6
in doctorate-granting institutions	8,839	424,650	14	Patents issued to State residents, 1998	1,750	80,287	14
Population, 1998 (000s)	3,971	274,153	24	Gross State product, 1997 (billions)	$126	$8,152	22
Civilian labor force, 1998 (000s)	2,246	139,125	22	of which, agriculture	2%	2%	
				manufacturing, mining, construction	19%	23%	
Personal income per capita, 1998	$28,657	$26,412	10	transportation, communication, utilities	11%	8%	
				wholesale and retail trade	16%	16%	
Federal spending				finance, insurance, real estate	17%	19%	
Total expenditures, 1998 (millions)	$21,009	$1,453,884	25	services	22%	20%	
R&D obligations, 1997 (millions)	$1,340	$68,424	14	government	13%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	1,340,231	195,364	211,039	608,137	269,276	50,078	6,337	14
Department of Agriculture	31,959	22,257	0	65	8,291	75	1,271	15
Department of Commerce	82,383	73,364	53	1,883	6,583	0	500	2
Department of Defense	574,734	27,363	2,285	528,682	15,434	970	0	16
Department of Energy	165,470	2,465	148,354	3,812	8,670	2,129	40	10
Department. of Health & Human Services	177,009	831	0	9,108	130,809	32,769	3,492	17
Department of Interior	66,003	62,880	0	44	2,821	120	138	2
Department of Transportation	10,835	116	0	6,659	68	3,239	753	12
Environmental Protection Agency	10,148	0	0	439	5,318	4,391	0	15
National Aeronautics & Space Admin	112,274	5,470	3,200	52,804	45,171	5,629	0	10
National Science Foundation	109,416	618	57,147	4,641	46,111	756	143	5
State rank, total	14	15	7	13	13	13	6	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Connecticut

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	8,875	483,162	20	Total R&D performance, 1997 (millions)	$3,454	$199,110	16
Doctoral engineers, 1997[1]	1,049	97,075	28	Industry R&D, 1997 (millions)	$3,014	$150,329	14
S&E doctorates awarded, 1998[1]	434	27,272	22	Academic R&D, 1997 (millions)	$393	$23,740	20
of which, in life sciences	31%	25%		of which, in life sciences	73%	56%	
in social sciences	22%	15%		in engineering	11%	16%	
in physical sciences	15%	14%		in physical sciences	6%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	719	37,928	15	expenditures, 1996 (millions)	$2,873	$189,626	23
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	1,065	35,413	11
in doctorate-granting institutions	4,834	424,650	28	Patents issued to State residents, 1998	1,798	80,287	12
Population, 1998 (000s)	3,274	274,153	30	Gross State product, 1997 (billions)	$135	$8,152	21
Civilian labor force, 1998 (000s)	1,709	139,125	28	of which, agriculture	1%	2%	
				manufacturing, mining, construction	20%	23%	
Personal income per capita, 1998	$37,598	$26,412	1	transportation, communication, utilities	6%	8%	
				wholesale and retail trade	14%	16%	
Federal spending				finance, insurance, real estate	29%	19%	
Total expenditures, 1998 (millions)	$19,424	$1,453,884	28	services	22%	20%	
R&D obligations, 1997 (millions)	$846	$68,424	20	government	8%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	846,458	32,731	0	535,620	259,744	14,752	3,611	20
Department of Agriculture	5,807	2,604	0	0	3,203	0	0	45
Department of Commerce	15,925	273	0	13,534	2,118	0	0	15
Department of Defense	448,824	17,648	0	414,772	12,726	3,678	0	18
Department of Energy	64,611	0	0	54,513	10,098	0	0	17
Department of Health & Human Services	227,530	4	0	6,940	208,063	9,636	2,887	14
Department of Interior	2,184	2,037	0	61	86	0	0	47
Department of Transportation	14,799	10,165	0	3,895	106	0	633	7
Environmental Protection Agency	1,405	0	0	217	1,143	45	0	31
National Aeronautics & Space Admin	42,485	0	0	39,641	1,718	1,126	0	18
National Science Foundation	22,888	0	0	2,047	20,483	267	91	25
State rank, total	20	40	na	15	15	23	18	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Delaware

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	3,612	483,162	35	Total R&D performance, 1997 (millions)	$1,089	$199,110	31
Doctoral engineers, 1997[1]	786	97,075	32	Industry R&D, 1997 (millions)	$1,009	$150,329	29
S&E doctorates awarded, 1998[1]	111	27,272	39	Academic R&D, 1997 (millions)	$65	$23,740	45
of which, in engineering	28%	22%		of which, in engineering	35%	16%	
in social sciences	19%	15%		in life sciences	20%	56%	
in physical sciences	16%	14%		in environmental sciences	15%	6%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	105	37,928	38	expenditures, 1996 (millions)	$526	$189,626	46
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	124	35,413	30
in doctorate-granting institutions	1,587	424,650	43	Patents issued to State residents, 1998	395	80,287	32
Population, 1998 (000s)	744	274,153	46	Gross State product, 1997 (billions)	$32	$8,152	43
Civilian labor force, 1998 (000s)	392	139,125	47	of which, agriculture	1%	2%	
				manufacturing, mining, construction	23%	23%	
Personal income per capita, 1998	$29,814	$26,412	7	transportation, communication, utilities	5%	8%	
				wholesale and retail trade	10%	16%	
Federal spending				finance, insurance, real estate	39%	19%	
Total expenditures, 1998 (millions)	$3,553	$1,453,884	50	services	14%	20%	
R&D obligations, 1997 (millions)	$49	$68,424	50	government	9%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	48,964	10,207	0	8,777	25,369	4,395	216	50
Department of Agriculture	3,742	971	0	170	2,599	0	2	50
Department of Commerce	1,789	620	0	199	970	0	0	30
Department of Defense	15,074	4,743	0	3,741	6,118	472	0	42
Department of Energy	1,751	0	0	0	1,324	427	0	43
Department of Health & Human Services	7,439	0	0	1,558	5,185	696	0	47
Department of Interior	922	780	0	0	142	0	0	52
Department of Transportation	4,580	3,093	0	1,193	80	0	214	22
Environmental Protection Agency	636	0	0	0	461	175	0	41
National Aeronautics & Space Admin	3,088	0	0	1,543	271	1,274	0	40
National Science Foundation	9,943	0	0	373	8,219	1,351	0	40
State rank, total	50	48	na	44	45	34	52	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

District of Columbia

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	11,300	483,162	15	Total R&D performance, 1997 (millions)	$2,768	$199,110	20
Doctoral engineers, 1997[1]	924	97,075	29	Industry R&D, 1997 (millions)	$645	$150,329	33
S&E doctorates awarded, 1998[1]	298	27,272	27	Academic R&D, 1997 (millions)	$214	$23,740	31
of which, in social sciences	32%	15%		of which, in life sciences	68%	56%	
in life sciences	18%	25%		in engineering	9%	16%	
in psychology	18%	13%		in physical sciences	9%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	143	37,928	34	expenditures, 1996 (millions)	$2,676	$189,626	24
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	94	35,413	33
in doctorate-granting institutions	8,742	424,650	17	Patents issued to State residents, 1998	74	80,287	47
Population, 1998 (000s)	523	274,153	51	Gross State product, 1997 (billions)	$52	$8,152	36
Civilian labor force, 1998 (000s)	267	139,125	51	of which, agriculture	0%	2%	
				manufacturing, mining, construction	3%	23%	
Personal income per capita, 1998	$37,278	$26,412	2	transportation, communication, utilities	5%	8%	
				wholesale and retail trade	4%	16%	
Federal spending				finance, insurance, real estate	18%	19%	
Total expenditures, 1998 (millions)	$24,034	$1,453,884	21	services	32%	20%	
R&D obligations, 1997 (millions)	$2,232	$68,424	9	government	37%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	2,232,284	1,732,539	390	167,567	155,363	175,954	471	9
Department of Agriculture	156,292	145,849	0	9,168	679	463	133	1
Department of Commerce	18,076	15,992	0	380	807	897	0	13
Department of Defense	1,022,235	859,963	390	106,443	48,337	7,046	56	9
Department of Energy	263,098	245,628	0	2,878	3,418	11,174	0	6
Department of Health & Human Services	195,212	74,440	0	12,589	75,004	33,155	24	16
Department of Interior	2,757	2,509	0	173	25	50	0	46
Department of Transportation	131,979	77,619	0	16,787	11,174	26,141	258	1
Environmental Protection Agency	62,118	51,470	0	465	167	10,016	0	2
National Aeronautics & Space Admin	305,791	255,871	0	13,234	8,088	28,598	0	8
National Science Foundation	74,726	3,198	0	5,450	7,664	58,414	0	9
State rank, total	9	2	20	23	25	4	47	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Florida

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	13,499	483,162	12	Total R&D performance, 1997 (millions)	$4,784	$199,110	12
Doctoral engineers, 1997[1]	2,816	97,075	12	Industry R&D, 1997 (millions)	$3,442	$150,329	12
S&E doctorates awarded, 1998[1]	997	27,272	9	Academic R&D, 1997 (millions)	$682	$23,740	12
of which, in psychology	28%	13%		of which, in life sciences	56%	56%	
in engineering	19%	22%		in engineering	13%	16%	
in life sciences	18%	25%		in physical sciences	13%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	653	37,928	17	expenditures, 1996 (millions)	$5,515	$189,626	10
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	752	35,413	13
in doctorate-granting institutions	17,525	424,650	8	Patents issued to State residents, 1998	2,668	80,287	10
Population, 1998 (000s)	14,916	274,153	4	Gross State product, 1997 (billions)	$381	$8,152	5
Civilian labor force, 1998 (000s)	7,228	139,125	4	of which, agriculture	2%	2%	
				manufacturing, mining, construction	13%	23%	
Personal income per capita, 1998	$25,852	$26,412	20	transportation, communication, utilities	9%	8%	
				wholesale and retail trade	19%	16%	
Federal spending				finance, insurance, real estate	22%	19%	
Total expenditures, 1998 (millions)	$83,558	$1,453,884	4	services	24%	20%	
R&D obligations, 1997 (millions)	$3,326	$68,424	7	government	12%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	3,326,418	649,376	0	2,363,556	296,270	11,009	6,207	7
Department of Agriculture	29,869	19,638	0	0	10,216	15	0	17
Department of Commerce	36,926	27,901	0	2,476	6,028	59	462	7
Department of Defense	2,036,881	328,551	0	1,658,565	46,997	568	2,200	5
Department of Energy	65,665	0	0	45,793	19,872	0	0	16
Department of Health & Human Services	143,449	9	0	9,433	128,130	5,745	132	22
Department of Interior	24,874	22,780	0	16	1,917	0	161	4
Department of Transportation	3,880	0	0	372	559	0	2,949	24
Environmental Protection Agency	10,644	7,720	0	362	2,020	542	0	14
National Aeronautics & Space Admin	908,821	242,777	0	646,120	18,385	1,236	303	4
National Science Foundation	65,409	0	0	419	62,146	2,844	0	11
State rank, total	7	7	na	4	12	25	7	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Georgia

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	9,634	483,162	17	Total R&D performance, 1997 (millions)	$2,272	$199,110	22
Doctoral engineers, 1997[1]	1,397	97,075	20	Industry R&D, 1997 (millions)	$1,273	$150,329	23
S&E doctorates awarded, 1998[1]	616	27,272	15	Academic R&D, 1997 (millions)	$766	$23,740	10
of which, in engineering	29%	22%		of which, in life sciences	50%	56%	
in life sciences	28%	25%		in engineering	26%	16%	
in psychology	14%	13%		in physical sciences	7%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	570	37,928	21	expenditures, 1996 (millions)	$4,860	$189,626	11
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	277	35,413	26
in doctorate-granting institutions	8,837	424,650	15	Patents issued to State residents, 1998	1,290	80,287	20
Population, 1998 (000s)	7,642	274,153	10	Gross State product, 1997 (billions)	$230	$8,152	10
Civilian labor force, 1998 (000s)	4,021	139,125	10	of which, agriculture	2%	2%	
				manufacturing, mining, construction	22%	23%	
Personal income per capita, 1998	$25,020	$26,412	24	transportation, communication, utilities	11%	8%	
				wholesale and retail trade	18%	16%	
Federal spending				finance, insurance, real estate	16%	19%	
Total expenditures, 1998 (millions)	$37,144	$1,453,884	13	services	18%	20%	
R&D obligations, 1997 (millions)	$3,920	$68,424	4	government	12%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	3,919,868	225,150	0	3,444,087	240,003	7,021	3,607	4
Department of Agriculture	47,635	33,644	0	0	13,478	445	68	6
Department of Commerce	1,667	379	0	52	684	552	0	32
Department of Defense	3,472,381	14,812	0	3,420,831	33,847	2,891	0	3
Department of Energy	10,494	0	0	233	9,866	395	0	30
Department of Health & Human Services	294,638	154,211	0	3,333	135,797	1,295	2	11
Department of Interior	11,590	11,094	0	63	433	0	0	13
Department of Transportation	11,771	40	0	9,630	635	187	1,279	10
Environmental Protection Agency	14,031	10,294	0	126	3,241	370	0	10
National Aeronautics & Space Admin	22,093	676	0	8,922	11,729	766	0	21
National Science Foundation	33,568	0	0	897	30,293	120	2,258	22
State rank, total	4	13	na	2	17	30	19	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Hawaii

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	2,585	483,162	38	Total R&D performance, 1997 (millions)	$275	$199,110	43
Doctoral engineers, 1997[1]	224	97,075	45	Industry R&D, 1997 (millions)	$87	$150,329	44
S&E doctorates awarded, 1998[1]	130	27,272	38	Academic R&D, 1997 (millions)	$120	$23,740	37
of which, in social sciences	31%	15%		of which, in life sciences	41%	56%	
in life sciences	29%	25%		in environmental sciences	32%	6%	
in physical sciences	15%	14%		in physical sciences	17%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	122	37,928	36	expenditures, 1996 (millions)	$751	$189,626	42
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	128	35,413	29
in doctorate-granting institutions	1,916	424,650	39	Patents issued to State residents, 1998	84	80,287	46
Population, 1998 (000s)	1,193	274,153	42	Gross State product, 1997 (billions)	$38	$8,152	42
Civilian labor force, 1998 (000s)	597	139,125	43	of which, agriculture	1%	2%	
				manufacturing, mining, construction	8%	23%	
Personal income per capita, 1998	$26,137	$26,412	18	transportation, communication, utilities	10%	8%	
				wholesale and retail trade	15%	16%	
Federal spending				finance, insurance, real estate	22%	19%	
Total expenditures, 1998 (millions)	$8,442	$1,453,884	39	services	22%	20%	
R&D obligations, 1997 (millions)	$151	$68,424	40	government	21%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	150,722	54,318	0	25,893	56,337	13,207	967	40
Department of Agriculture	21,250	10,015	0	0	5,871	5,364	0	25
Department of Commerce	12,839	8,760	0	777	3,172	0	130	19
Department of Defense	60,710	29,582	0	23,066	8,062	0	0	31
Department of Energy	3,005	0	0	0	2,814	191	0	40
Department of Health & Human Services	20,938	0	0	683	15,882	3,823	550	44
Department of Interior	5,988	5,811	0	18	159	0	0	29
Department of Transportation	383	0	0	0	96	0	287	48
Environmental Protection Agency	140	0	0	0	140	0	0	47
National Aeronautics & Space Admin	6,932	150	0	955	3,336	2,491	0	33
National Science Foundation	18,537	0	0	394	16,805	1,338	0	28
State rank, total	40	28	na	39	36	24	38	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Idaho

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	1,992	483,162	43	Total R&D performance, 1997 (millions)	$1,270	$199,110	30
Doctoral engineers, 1997[1]	411	97,075	38	Industry R&D, 1997 (millions)	$1,181	$150,329	24
S&E doctorates awarded, 1998[1]	51	27,272	48	Academic R&D, 1997 (millions)	$64	$23,740	46
of which, in life sciences	47%	25%		of which, in life sciences	71%	56%	
in physical sciences	20%	14%		in engineering	15%	16%	
in engineering	18%	22%		in environmental sciences	6%	6%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	37	37,928	47	expenditures, 1996 (millions)	$607	$189,626	45
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-1998	44	35,413	43
in doctorate-granting institutions	1,618	424,650	42	Patents issued to state residents, 1998	855	80,287	24
Population, 1998 (000s)	1,229	274,153	41	Gross state product, 1997 (billions)	$29	$8,152	45
Civilian labor force, 1998 (000s)	653	139,125	40	of which, agriculture	6%	2%	
				manufacturing, mining, construction	27%	23%	
Personal income per capita, 1998	$21,081	$26,412	44	transportation, communication, utilities	9%	8%	
				wholesale and retail trade	16%	16%	
Federal spending				finance, insurance, real estate	13%	19%	
Total expenditures, 1998 (millions)	$5,961	$1,453,884	44	services	17%	20%	
R&D obligations, 1997 (millions)	$206	$68,424	36	government	13%	12%	

NOTE: Rankings and totals are based on data for the 50 states, D.C., and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by state, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	205,660	24,092	56,664	110,729	13,609	315	251	36
Department of Agriculture	17,166	12,982	0	0	3,981	181	22	30
Department of Commerce	1,538	1,411	0	52	75	0	0	34
Department of Defense	10,978	1,230	4,801	3,369	1,578	0	0	44
Department of Energy	159,735	900	50,693	105,613	2,529	0	0	11
Dept. of Health & Human Services	1,538	0	0	232	1,172	134	0	51
Department of Interior	8,934	7,479	0	13	1,442	0	0	17
Department of Transportation	2,416	0	1,080	1,107	0	0	229	29
Environmental Protection Agency	288	0	0	0	288	0	0	45
Nat'l Aeronautics & Space Admin	570	90	90	262	128	0	0	51
National Science Foundation	2,497	0	0	81	2,416	0	0	51
State rank, total	36	43	11	29	52	51	51	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 states, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCE: Prepared by the National Science Foundation/ Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Illinois

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	19,887	483,162	7	Total R&D performance, 1997 (millions)	$8,034	$199,110	8
Doctoral engineers, 1997[1]	3,742	97,075	9	Industry R&D, 1997 (millions)	$6,248	$150,329	9
S&E doctorates awarded, 1998[1]	1,467	27,272	5	Academic R&D, 1997 (millions)	$930	$23,740	7
of which, in engineering	24%	22%		of which, in life sciences	53%	56%	
in life sciences	20%	25%		in engineering	13%	16%	
in social sciences	18%	15%		in physical sciences	11%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	1,030	37,928	10	expenditures, 1996 (millions)	$9,457	$189,626	5
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	525	35,413	19
in doctorate-granting institutions	21,126	424,650	5	Patents issued to State residents, 1998	3,727	80,287	5
Population, 1998 (000s)	12,045	274,153	5	Gross State product, 1997 (billions)	$394	$8,152	4
Civilian labor force, 1998 (000s)	6,223	139,125	5	of which, agriculture	1%	2%	
				manufacturing, mining, construction	23%	23%	
Personal income per capita, 1998	$28,873	$26,412	9	transportation, communication, utilities	9%	8%	
				wholesale and retail trade	16%	16%	
Federal spending				finance, insurance, real estate	20%	19%	
Total expenditures, 1998 (millions)	$55,467	$1,453,884	7	services	21%	20%	
R&D obligations, 1997 (millions)	$1,140	$68,424	17	government	10%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	1,140,163	77,224	422,522	114,294	465,934	54,309	5,880	17
Department of Agriculture	41,089	29,030	0	0	11,625	434	0	7
Department of Commerce	14,973	65	3	12,239	1,391	650	625	16
Department of Defense	145,256	40,614	3,346	57,223	43,089	984	0	28
Department of Energy	474,034	2,148	418,909	22,160	30,518	299	0	4
Department of Health & Human Services	314,840	814	0	9,137	256,683	44,420	3,786	10
Department of Interior	3,735	3,462	0	0	253	20	0	40
Department of Transportation	11,128	260	0	8,076	443	1,075	1,274	11
Environmental Protection Agency	2,409	0	0	179	2,230	0	0	23
National Aeronautics & Space Admin	17,938	831	264	4,016	11,856	776	195	24
National Science Foundation	114,761	0	0	1,264	107,846	5,651	0	4
State rank, total	17	26	3	27	8	12	10	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Indiana

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	7,155	483,162	23	Total R&D performance, 1997 (millions)	$3,149	$199,110	18
Doctoral engineers, 1997[1]	1,166	97,075	25	Industry R&D, 1997 (millions)	$2,677	$150,329	15
S&E doctorates awarded, 1998[1]	689	27,272	11	Academic R&D, 1997 (millions)	$400	$23,740	19
of which, in engineering	25%	22%		of which, in life sciences	49%	56%	
in life sciences	23%	25%		in engineering	19%	16%	
in physical sciences	18%	14%		in physical sciences	15%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	699	37,928	16	expenditures, 1996 (millions)	$3,930	$189,626	16
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	168	35,413	27
in doctorate-granting institutions	9,269	424,650	13	Patents issued to State residents, 1998	1,372	80,287	19
Population, 1998 (000s)	5,899	274,153	14	Gross State product, 1997 (billions)	$162	$8,152	15
Civilian labor force, 1998 (000s)	3,088	139,125	14	of which, agriculture	2%	2%	
				manufacturing, mining, construction	36%	23%	
Personal income per capita, 1998	$24,219	$26,412	30	transportation, communication, utilities	8%	8%	
				wholesale and retail trade	15%	16%	
Federal spending				finance, insurance, real estate	13%	19%	
Total expenditures, 1998 (millions)	$26,098	$1,453,884	18	services	16%	20%	
R&D obligations, 1997 (millions)	$411	$68,424	25	government	10%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	410,646	68,272	0	138,563	197,947	3,588	2,276	25
Department of Agriculture	16,956	4,685	0	82	12,182	7	0	31
Department of Commerce	869	18	0	323	528	0	0	39
Department of Defense	201,363	57,938	0	126,729	13,939	2,757	0	24
Department of Energy	28,212	0	0	1,938	26,274	0	0	23
Department of Health & Human Services	100,809	166	0	4,514	94,824	104	1,201	25
Department of Interior	5,041	4,894	0	25	122	0	0	33
Department of Transportation	1,075	0	0	0	0	0	1,075	36
Environmental Protection Agency	1,942	0	0	117	1,153	672	0	29
National Aeronautics & Space Admin	7,872	571	0	4,360	2,897	44	0	32
National Science Foundation	46,507	0	0	475	46,028	4	0	17
State rank, total	25	27	na	25	21	37	30	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Iowa

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	4,181	483,162	32	Total R&D performance, 1997 (millions)	$980	$199,110	34
Doctoral engineers, 1997[1]	537	97,075	35	Industry R&D, 1997 (millions)	$578	$150,329	35
S&E doctorates awarded, 1998[1]	423	27,272	23	Academic R&D, 1997 (millions)	$342	$23,740	24
of which, in life sciences	27%	25%		of which, in life sciences	62%	56%	
in engineering	25%	22%		in engineering	18%	16%	
in physical sciences	17%	14%		in physical sciences	8%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	501	37,928	23	expenditures, 1996 (millions)	$2,890	$189,626	22
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	51	35,413	42
in doctorate-granting institutions	5,130	424,650	27	Patents issued to State residents, 1998	644	80,287	27
Population, 1998 (000s)	2,862	274,153	31	Gross State product, 1997 (billions)	$81	$8,152	29
Civilian labor force, 1998 (000s)	1,570	139,125	30	of which, agriculture	7%	2%	
				manufacturing, mining, construction	29%	23%	
Personal income per capita, 1998	$23,925	$26,412	33	transportation, communication, utilities	8%	8%	
				wholesale and retail trade	15%	16%	
Federal spending				finance, insurance, real estate	15%	19%	
Total expenditures, 1998 (millions)	$14,535	$1,453,884	32	services	15%	20%	
R&D obligations, 1997 (millions)	$228	$68,424	34	government	11%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	228,180	29,043	20,450	33,365	139,714	3,252	2,356	34
Department of Agriculture	41,080	25,748	0	0	15,332	0	0	8
Department of Commerce	1,225	0	0	190	1,035	0	0	37
Department of Defense	37,325	326	1,563	30,583	4,853	0	0	34
Department of Energy	25,510	0	18,887	1,001	3,922	1,700	0	24
Department of Health & Human Services	92,903	9	0	747	90,301	1,552	294	26
Department of Interior	3,076	2,960	0	0	116	0	0	44
Department of Transportation	4,925	0	0	0	2,863	0	2,062	20
Environmental Protection Agency	2,162	0	0	70	2,092	0	0	27
National Aeronautics & Space Admin	6,717	0	0	755	5,962	0	0	34
National Science Foundation	13,257	0	0	19	13,238	0	0	33
State rank, total	34	41	15	35	27	39	28	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Kansas

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	3,801	483,162	34	Total R&D performance, 1997 (millions)	$1,351	$199,110	29
Doctoral engineers, 1997[1]	543	97,075	34	Industry R&D, 1997 (millions)	$1,136	$150,329	25
S&E doctorates awarded, 1998[1]	287	27,272	28	Academic R&D, 1997 (millions)	$198	$23,740	32
of which, in life sciences	30%	25%		of which, in life sciences	57%	56%	
in engineering	17%	22%		in engineering	16%	16%	
in psychology	17%	13%		in physical sciences	10%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	262	37,928	29	expenditures, 1996 (millions)	$1,726	$189,626	32
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	73	35,413	37
in doctorate-granting institutions	6,367	424,650	23	Patents issued to State residents, 1998	349	80,287	34
Population, 1998 (000s)	2,629	274,153	33	Gross State product, 1997 (billions)	$72	$8,152	31
Civilian labor force, 1998 (000s)	1,411	139,125	31	of which, agriculture	4%	2%	
				manufacturing, mining, construction	23%	23%	
Personal income per capita, 1998	$24,981	$26,412	25	transportation, communication, utilities	11%	8%	
				wholesale and retail trade	18%	16%	
Federal spending				finance, insurance, real estate	13%	19%	
Total expenditures, 1998 (millions)	$13,426	$1,453,884	33	services	17%	20%	
R&D obligations, 1997 (millions)	$255	$68,424	33	government	14%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	255,490	15,622	0	171,241	63,749	1,328	3,550	33
Department of Agriculture	13,078	6,529	0	0	6,549	0	0	35
Department of Commerce	564	102	0	0	0	462	0	41
Department of Defense	173,818	3,322	0	168,130	2,363	3	0	26
Department of Energy	4,401	0	0	233	4,168	0	0	36
Department of Health & Human Services	37,570	803	0	1,814	31,164	707	3,082	36
Department of Interior	4,961	4,866	0	14	81	0	0	34
Department of Transportation	542	0	0	0	74	0	468	45
Environmental Protection Agency	2,849	0	0	85	2,608	156	0	22
National Aeronautics & Space Admin	3,774	0	0	942	2,832	0	0	38
National Science Foundation	13,933	0	0	23	13,910	0	0	32
State rank, total	33	46	na	22	35	47	22	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Kentucky

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	4,228	483,162	30	Total R&D performance, 1997 (millions)	$526	$199,110	38
Doctoral engineers, 1997[1]	308	97,075	44	Industry R&D, 1997 (millions)	$359	$150,329	38
S&E doctorates awarded, 1998[1]	202	27,272	33	Academic R&D, 1997 (millions)	$158	$23,740	35
of which, in life sciences	40%	25%		of which, in life sciences	75%	56%	
in psychology	14%	13%		in engineering	15%	16%	
in engineering	14%	22%		in physical sciences	4%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	206	37,928	31	expenditures, 1996 (millions)	$2,146	$189,626	29
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	61	35,413	40
in doctorate-granting institutions	3,417	424,650	33	Patents issued to State residents, 1998	349	80,287	34
Population, 1998 (000s)	3,936	274,153	25	Gross State product, 1997 (billions)	$100	$8,152	26
Civilian labor force, 1998 (000s)	1,924	139,125	26	of which, agriculture	3%	2%	
				manufacturing, mining, construction	34%	23%	
Personal income per capita, 1998	$21,506	$26,412	40	transportation, communication, utilities	8%	8%	
				wholesale and retail trade	15%	16%	
Federal spending				finance, insurance, real estate	12%	19%	
Total expenditures, 1998 (millions)	$23,161	$1,453,884	22	services	15%	20%	
R&D obligations, 1997 (millions)	$91	$68,424	43	government	13%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	91,291	7,289	0	7,436	71,617	1,086	3,863	43
Department of Agriculture	8,474	1	0	0	8,473	0	0	39
Department of Commerce	184	54	0	0	0	130	0	50
Department of Defense	9,530	4,495	0	2,469	2,566	0	0	46
Department of Energy	5,698	0	0	1,434	4,264	0	0	34
Department of Health & Human Services	51,828	0	0	3,093	44,687	896	3,152	31
Department of Interior	2,895	2,739	0	10	146	0	0	45
Department of Transportation	866	0	0	155	0	0	711	39
Environmental Protection Agency	974	0	0	143	771	60	0	35
National Aeronautics & Space Admin	1,552	0	0	45	1,507	0	0	45
National Science Foundation	9,290	0	0	87	9,203	0	0	43
State rank, total	43	51	na	46	32	48	16	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Louisiana

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	5,293	483,162	28	Total R&D performance, 1997 (millions)	$554	$199,110	37
Doctoral engineers, 1997[1]	818	97,075	30	Industry R&D, 1997 (millions)	$172	$150,329	41
S&E doctorates awarded, 1998[1]	321	27,272	26	Academic R&D, 1997 (millions)	$330	$23,740	25
of which, in life sciences	35%	25%		of which, in life sciences	63%	56%	
in engineering	15%	22%		in engineering	15%	16%	
in social sciences	13%	15%		in environmental sciences	7%	6%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	264	37,928	28	expenditures, 1996 (millions)	$2,561	$189,626	25
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	94	35,413	33
in doctorate-granting institutions	5,834	424,650	25	Patents issued to State residents, 1998	485	80,287	31
Population, 1998 (000s)	4,369	274,153	22	Gross State product, 1997 (billions)	$124	$8,152	23
Civilian labor force, 1998 (000s)	2,063	139,125	24	of which, agriculture	1%	2%	
				manufacturing, mining, construction	36%	23%	
Personal income per capita, 1998	$21,346	$26,412	42	transportation, communication, utilities	9%	8%	
				wholesale and retail trade	14%	16%	
Federal spending				finance, insurance, real estate	13%	19%	
Total expenditures, 1998 (millions)	$22,900	$1,453,884	23	services	16%	20%	
R&D obligations, 1997 (millions)	$211	$68,424	35	government	11%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	211,036	47,910	0	31,766	123,586	4,214	3,560	35
Department of Agriculture	32,823	24,723	0	0	8,042	58	0	14
Department of Commerce	8,011	5,836	0	625	1,035	515	0	25
Department of Defense	30,768	957	0	7,305	22,434	72	0	36
Department of Energy	9,989	0	0	85	9,904	0	0	31
Department of Health & Human Services	64,520	3,916	0	166	57,017	3,420	1	29
Department of Interior	15,148	12,478	0	684	1,986	0	0	8
Department of Transportation	803	0	0	131	0	0	672	40
Environmental Protection Agency	6,651	0	0	0	6,502	149	0	18
National Aeronautics & Space Admin	27,174	0	0	22,645	4,529	0	0	20
National Science Foundation	15,149	0	0	125	12,137	0	2,887	30
State rank, total	35	31	na	36	29	35	21	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Maine

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	2,341	483,162	39	Total R&D performance, 1997 (millions)	$149	$199,110	47
Doctoral engineers, 1997[1]	400	97,075	39	Industry R&D, 1997 (millions)	$83	$150,329	45
S&E doctorates awarded, 1998[1]	34	27,272	50	Academic R&D, 1997 (millions)	$33	$23,740	51
of which, in life sciences	47%	25%		of which, in life sciences	50%	56%	
in psychology	21%	13%		in environmental sciences	26%	6%	
in engineering	15%	22%		in engineering	14%	16%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	25	37,928	48	expenditures, 1996 (millions)	$673	$189,626	43
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	83	35,413	36
in doctorate-granting institutions	765	424,650	50	Patents issued to State residents, 1998	123	80,287	45
Population, 1998 (000s)	1,244	274,153	40	Gross State product, 1997 (billions)	$30	$8,152	44
Civilian labor force, 1998 (000s)	651	139,125	42	of which, agriculture	2%	2%	
				manufacturing, mining, construction	22%	23%	
Personal income per capita, 1998	$22,952	$26,412	37	transportation, communication, utilities	7%	8%	
				wholesale and retail trade	18%	16%	
Federal spending				finance, insurance, real estate	19%	19%	
Total expenditures, 1998 (millions)	$7,463	$1,453,884	42	services	19%	20%	
R&D obligations, 1997 (millions)	$69	$68,424	46	government	13%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	68,683	5,685	0	19,962	13,866	26,791	2,379	46
Department of Agriculture	4,529	381	0	0	4,104	1	43	48
Department of Commerce	5,335	3,585	0	0	1,417	333	0	26
Department of Defense	19,539	371	0	17,902	1,232	34	0	40
Department of Energy	2,035	0	0	60	796	579	600	42
Department of Health & Human Services	26,601	0	0	1,797	1,165	22,222	1,417	40
Department of Interior	1,806	1,348	0	16	442	0	0	49
Department of Transportation	151	0	0	37	0	0	114	52
Environmental Protection Agency	683	0	0	0	683	0	0	39
National Aeronautics & Space Admin	1,091	0	0	56	430	400	205	47
National Science Foundation	6,913	0	0	94	3,597	3,222	0	47
State rank, total	46	52	na	40	51	17	27	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Maryland

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	20,542	483,162	6	Total R&D performance, 1997 (millions)	$7,395	$199,110	10
Doctoral engineers, 1997[1]	3,203	97,075	10	Industry R&D, 1997 (millions)	$1,425	$150,329	20
S&E doctorates awarded, 1998[1]	657	27,272	12	Academic R&D, 1997 (millions)	$1,242	$23,740	5
of which, in life sciences	26%	25%		of which, in life sciences	41%	56%	
in engineering	22%	22%		in engineering	22%	16%	
in social sciences	16%	15%		in physical sciences	15%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	1,372	37,928	6	expenditures, 1996 (millions)	$4,009	$189,626	14
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	1,759	35,413	4
in doctorate-granting institutions	8,834	424,650	16	Patents issued to State residents, 1998	1,442	80,287	18
Population, 1998 (000s)	5,135	274,153	19	Gross State product, 1997 (billions)	$154	$8,152	16
Civilian labor force, 1998 (000s)	2,756	139,125	19	of which, agriculture	1%	2%	
				manufacturing, mining, construction	14%	23%	
Personal income per capita, 1998	$29,943	$26,412	6	transportation, communication, utilities	7%	8%	
				wholesale and retail trade	15%	16%	
Federal spending				finance, insurance, real estate	22%	19%	
Total expenditures, 1998 (millions)	$41,565	$1,453,884	10	services	24%	20%	
R&D obligations, 1997 (millions)	$7,329	$68,424	2	government	17%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	7,328,937	4,569,181	161,028	1,740,648	700,293	154,995	2,792	2
Department of Agriculture	124,859	117,658	0	90	6,863	115	133	2
Department of Commerce	337,400	320,265	0	10,014	6,847	274	0	1
Department of Defense	2,633,709	1,515,748	808	928,585	182,524	5,684	360	4
Department of Energy	50,605	22,837	0	10,475	11,676	5,617	0	18
Department of Health & Human Services	3,004,910	2,226,541	156,946	214,216	356,566	49,711	930	1
Department of Interior	17,555	16,815	0	407	328	5	0	6
Department of Transportation	33,540	5,578	0	24,923	2,296	0	743	5
Environmental Protection Agency	11,600	0	0	3,499	7,624	77	400	12
National Aeronautics & Space Admin	1,057,414	340,792	3,274	541,642	81,768	89,712	226	3
National Science Foundation	57,345	2,947	0	6,797	43,801	3,800	0	13
State rank, total	2	1	9	6	5	6	24	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Massachusetts

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	21,364	483,162	5	Total R&D performance, 1997 (millions)	$11,097	$199,110	5
Doctoral engineers, 1997[1]	3,945	97,075	7	Industry R&D, 1997 (millions)	$8,300	$150,329	5
S&E doctorates awarded, 1998[1]	1,533	27,272	4	Academic R&D, 1997 (millions)	$1,268	$23,740	4
of which, in engineering	25%	22%		of which, in life sciences	39%	56%	
in life sciences	24%	25%		in engineering	19%	16%	
in social sciences	20%	15%		in physical sciences	15%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	3,920	37,928	2	expenditures, 1996 (millions)	$8,427	$189,626	6
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	5,514	35,413	2
in doctorate-granting institutions	22,316	424,650	4	Patents issued to State residents, 1998	3,413	80,287	7
Population, 1998 (000s)	6,147	274,153	13	Gross State product, 1997 (billions)	$221	$8,152	11
Civilian labor force, 1998 (000s)	3,273	139,125	13	of which, agriculture	1%	2%	
				manufacturing, mining, construction	18%	23%	
Personal income per capita, 1998	$32,797	$26,412	4	transportation, communication, utilities	6%	8%	
				wholesale and retail trade	15%	16%	
Federal spending				finance, insurance, real estate	24%	19%	
Total expenditures, 1998 (millions)	$37,173	$1,453,884	12	services	26%	20%	
R&D obligations, 1997 (millions)	$3,438	$68,424	6	government	9%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Colunbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	3,437,962	361,118	319,153	1,308,755	792,569	652,158	4,209	6
Department of Agriculture	21,406	15,372	0	63	5,713	249	9	23
Department of Commerce	51,887	38,181	0	7,765	4,147	1,794	0	5
Department of Defense	1,819,317	239,442	319,003	1,128,158	98,737	33,977	0	6
Department of Energy	109,045	18	0	30,105	74,435	4,487	0	12
Department of Health & Human Services	1,048,408	1,659	0	90,034	411,247	542,872	2,596	3
Department of Interior	6,434	5,903	0	9	522	0	0	27
Department of Transportation	43,819	27,630	0	12,693	1,892	0	1,604	3
Environmental Protection Agency	14,755	0	0	2,003	7,576	5,176	0	9
National Aeronautics & Space Admin	153,619	30,832	150	25,944	49,356	47,337	0	9
National Science Foundation	169,272	2,081	0	11,981	138,944	16,266	0	3
State rank, total	6	11	4	8	3	1	13	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Michigan

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	12,939	483,162	13	Total R&D performance, 1997 (millions)	$13,991	$199,110	2
Doctoral engineers, 1997[1]	3,813	97,075	8	Industry R&D, 1997 (millions)	$13,009	$150,329	2
S&E doctorates awarded, 1998[1]	1,027	27,272	8	Academic R&D, 1997 (millions)	$842	$23,740	8
of which, in engineering	27%	22%		of which, in life sciences	55%	56%	
in life sciences	21%	25%		in engineering	19%	16%	
in social sciences	16%	15%		in social sciences	10%	4%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	1,119	37,928	8	expenditures, 1996 (millions)	$6,562	$189,626	8
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	690	35,413	14
in doctorate-granting institutions	16,296	424,650	9	Patents issued to State residents, 1998	3,511	80,287	6
Population, 1998 (000s)	9,817	274,153	8	Gross State product, 1997 (billions)	$273	$8,152	9
Civilian labor force, 1998 (000s)	5,029	139,125	8	of which, agriculture	1%	2%	
				manufacturing, mining, construction	30%	23%	
Personal income per capita, 1998	$25,857	$26,412	19	transportation, communication, utilities	7%	8%	
				wholesale and retail trade	17%	16%	
Federal spending				finance, insurance, real estate	15%	19%	
Total expenditures, 1998 (millions)	$41,917	$1,453,884	9	services	19%	20%	
R&D obligations, 1997 (millions)	$735	$68,424	21	government	11%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	735,221	107,749	0	166,289	425,543	31,743	3,897	21
Department of Agriculture	20,749	6,435	0	82	14,232	0	0	26
Department of Commerce	29,343	6,073	0	20,621	1,595	1,054	0	8
Department of Defense	251,334	87,035	0	117,974	30,221	16,089	15	22
Department of Energy	12,570	0	0	0	12,570	0	0	29
Department of Health & Human Services	291,306	836	0	13,288	268,066	6,362	2,754	12
Department of Interior	7,519	7,370	0	7	104	0	38	19
Department of Transportation	4,657	0	0	1,190	2,478	0	989	21
Environmental Protection Agency	15,754	0	0	7,854	5,879	1,920	101	6
National Aeronautics & Space Admin	19,031	0	0	3,657	10,827	4,547	0	23
National Science Foundation	82,958	0	0	1,616	79,571	1,771	0	7
State rank, total	21	22	na	24	9	16	15	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Minnesota

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	9,528	483,162	18	Total R&D performance, 1997 (millions)	$3,605	$199,110	15
Doctoral engineers, 1997[1]	1,453	97,075	19	Industry R&D, 1997 (millions)	$3,116	$150,329	13
S&E doctorates awarded, 1998[1]	481	27,272	19	Academic R&D, 1997 (millions)	$363	$23,740	23
of which, in life sciences	31%	25%		of which, in life sciences	73%	56%	
in engineering	21%	22%		in engineering	11%	16%	
in social sciences	15%	15%		in physical sciences	5%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	791	37,928	14	expenditures, 1996 (millions)	$3,597	$189,626	18
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	554	35,413	18
in doctorate-granting institutions	5,892	424,650	24	Patents issued to State residents, 1998	2,472	80,287	11
Population, 1998 (000s)	4,725	274,153	20	Gross State product, 1997 (billions)	$149	$8,152	18
Civilian labor force, 1998 (000s)	2,682	139,125	20	of which, agriculture	2%	2%	
				manufacturing, mining, construction	24%	23%	
Personal income per capita, 1998	$27,510	$26,412	12	transportation, communication, utilities	8%	8%	
				wholesale and retail trade	17%	16%	
Federal spending				finance, insurance, real estate	18%	19%	
Total expenditures, 1998 (millions)	$20,399	$1,453,884	26	services	20%	20%	
R&D obligations, 1997 (millions)	$609	$68,424	23	government	11%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	609,395	34,573	0	286,173	193,278	91,783	3,588	23
Department of Agriculture	21,735	13,170	0	0	8,274	224	67	22
Department of Commerce	10,470	185	0	8,244	768	650	623	21
Department of Defense	302,187	1,263	0	265,475	8,605	26,844	0	21
Department of Energy	6,334	0	0	70	6,264	0	0	32
Department of Health & Human Services	203,687	800	0	8,009	129,466	63,062	2,350	15
Department of Interior	6,443	6,288	0	8	147	0	0	26
Department of Transportation	1,197	0	0	552	97	0	548	34
Environmental Protection Agency	15,386	12,867	0	0	1,918	601	0	7
National Aeronautics & Space Admin	6,441	0	0	2,946	3,093	402	0	36
National Science Foundation	35,515	0	0	869	34,646	0	0	20
State rank, total	23	37	na	18	22	8	20	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Mississippi

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	2,725	483,162	37	Total R&D performance, 1997 (millions)	$370	$199,110	41
Doctoral engineers, 1997[1]	578	97,075	33	Industry R&D, 1997 (millions)	$73	$150,329	46
S&E doctorates awarded, 1998[1]	159	27,272	37	Academic R&D, 1997 (millions)	$125	$23,740	36
of which, in life sciences	31%	25%		of which, in life sciences	59%	56%	
in psychology	18%	13%		in engineering	18%	16%	
in physical sciences	17%	14%		in physical sciences	10%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	79	37,928	40	expenditures, 1996 (millions)	$1,568	$189,626	34
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	34	35,413	45
in doctorate-granting institutions	3,098	424,650	35	Patents issued to State residents, 1998	173	80,287	42
Population, 1998 (000s)	2,752	274,153	32	Gross State product, 1997 (billions)	$58	$8,152	33
Civilian labor force, 1998 (000s)	1,269	139,125	33	of which, agriculture	3%	2%	
				manufacturing, mining, construction	28%	23%	
Personal income per capita, 1998	$18,958	$26,412	51	transportation, communication, utilities	10%	8%	
				wholesale and retail trade	16%	16%	
Federal spending				finance, insurance, real estate	12%	19%	
Total expenditures, 1998 (millions)	$15,314	$1,453,884	30	services	17%	20%	
R&D obligations, 1997 (millions)	$290	$68,424	31	government	15%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	289,791	165,297	0	72,030	44,569	6,659	1,236	31
Department of Agriculture	54,282	37,831	0	0	15,516	935	0	5
Department of Commerce	9,415	7,815	0	617	358	0	625	23
Department of Defense	113,384	70,985	0	34,649	6,506	1,244	0	29
Department of Energy	1,060	0	0	40	1,020	0	0	45
Department of Health & Human Services	14,330	0	0	370	12,748	1,211	1	45
Department of Interior	3,384	3,288	0	11	85	0	0	43
Department of Transportation	3,118	2,063	0	132	313	0	610	27
Environmental Protection Agency	893	0	0	0	743	150	0	36
National Aeronautics & Space Admin	84,164	43,315	0	36,209	1,521	3,119	0	13
National Science Foundation	5,761	0	0	2	5,759	0	0	48
State rank, total	31	17	na	30	39	31	35	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Missouri

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	8,988	483,162	19	Total R&D performance, 1997 (millions)	$1,826	$199,110	24
Doctoral engineers, 1997[1]	1,322	97,075	24	Industry R&D, 1997 (millions)	$1,290	$150,329	22
S&E doctorates awarded, 1998[1]	476	27,272	20	Academic R&D, 1997 (millions)	$465	$23,740	15
of which, in life sciences	29%	25%		of which, in life sciences	79%	56%	
in engineering	23%	22%		in engineering	8%	16%	
in psychology	15%	13%		in physical sciences	4%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	904	37,928	12	expenditures, 1996 (millions)	$3,986	$189,626	15
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	150	35,413	28
in doctorate-granting institutions	6,725	424,650	21	Patents issued to State residents, 1998	900	80,287	23
Population, 1998 (000s)	5,439	274,153	16	Gross State product, 1997 (billions)	$152	$8,152	17
Civilian labor force, 1998 (000s)	2,857	139,125	17	of which, agriculture	2%	2%	
				manufacturing, mining, construction	26%	23%	
Personal income per capita, 1998	$24,427	$26,412	29	transportation, communication, utilities	10%	8%	
				wholesale and retail trade	17%	16%	
Federal spending				finance, insurance, real estate	15%	19%	
Total expenditures, 1998 (millions)	$32,682	$1,453,884	15	services	20%	20%	
R&D obligations, 1997 (millions)	$1,130	$68,424	18	government	11%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	1,130,148	50,526	0	786,905	267,999	21,003	3,715	18
Department of Agriculture	22,686	9,332	0	90	13,264	0	0	21
Department of Commerce	282	83	0	0	15	184	0	48
Department of Defense	812,953	29,673	0	775,273	8,007	0	0	12
Department of Energy	3,165	0	0	0	3,149	16	0	39
Department of Health & Human Services	236,635	20	0	847	215,668	17,905	2,195	13
Department of Interior	11,765	11,108	0	19	583	0	55	12
Department of Transportation	3,258	235	0	0	42	1,516	1,465	26
Environmental Protection Agency	283	0	0	0	283	0	0	46
National Aeronautics & Space Admin	16,009	75	0	10,548	5,386	0	0	25
National Science Foundation	23,112	0	0	128	21,602	1,382	0	24
State rank, total	18	29	na	9	14	20	17	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Montana

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	1,978	483,162	44	Total R&D performance, 1997 (millions)	$199	$199,110	46
Doctoral engineers, 1997[1]	138	97,075	50	Industry R&D, 1997 (millions)	$92	$150,329	43
S&E doctorates awarded, 1998[1]	68	27,272	43	Academic R&D, 1997 (millions)	$71	$23,740	44
of which, in life sciences	53%	25%		of which, in life sciences	66%	56%	
in physical sciences	18%	14%		in engineering	10%	16%	
in psychology	15%	13%		in physical sciences	8%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	67	37,928	42	expenditures, 1996 (millions)	$459	$189,626	49
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	64	35,413	39
in doctorate-granting institutions	1,150	424,650	47	Patents issued to State residents, 1998	130	80,287	44
Population, 1998 (000s)	880	274,153	45	Gross State product, 1997 (billions)	$19	$8,152	49
Civilian labor force, 1998 (000s)	468	139,125	45	of which, agriculture	5%	2%	
				manufacturing, mining, construction	17%	23%	
Personal income per capita, 1998	$20,172	$26,412	48	transportation, communication, utilities	12%	8%	
				wholesale and retail trade	17%	16%	
Federal spending				finance, insurance, real estate	14%	19%	
Total expenditures, 1998 (millions)	$5,465	$1,453,884	45	services	20%	20%	
R&D obligations, 1997 (millions)	$79	$68,424	45	government	16%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	79,347	33,199	0	10,103	32,117	3,561	367	45
Department of Agriculture	18,832	11,184	0	20	6,240	1,388	0	28
Department of Commerce	1,664	0	0	0	1,200	464	0	33
Department of Defense	13,485	794	0	8,783	3,908	0	0	43
Department of Energy	1,565	0	0	131	935	499	0	44
Department of Health & Human Services	22,555	15,175	0	690	5,548	1,141	1	43
Department of Interior	6,707	6,046	0	22	639	0	0	23
Department of Transportation	503	0	0	0	137	0	366	47
Environmental Protection Agency	330	0	0	0	330	0	0	44
National Aeronautics & Space Admin	4,249	0	0	255	3,925	69	0	37
National Science Foundation	9,457	0	0	202	9,255	0	0	41
State rank, total	45	39	na	43	43	38	48	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Nebraska

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	2,871	483,162	36	Total R&D performance, 1997 (millions)	$275	$199,110	43
Doctoral engineers, 1997[1]	343	97,075	42	Industry R&D, 1997 (millions)	$71	$150,329	47
S&E doctorates awarded, 1998[1]	189	27,272	35	Academic R&D, 1997 (millions)	$176	$23,740	33
of which, in life sciences	45%	25%		of which, in life sciences	75%	56%	
in social sciences	15%	15%		in engineering	11%	16%	
in psychology	13%	13%		in environmental sciences	7%	6%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	135	37,928	35	expenditures, 1996 (millions)	$1,481	$189,626	35
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	55	35,413	41
in doctorate-granting institutions	2,780	424,650	36	Patents issued to State residents, 1998	204	80,287	40
Population, 1998 (000s)	1,663	274,153	39	Gross State product, 1997 (billions)	$49	$8,152	37
Civilian labor force, 1998 (000s)	916	139,125	37	of which, agriculture	7%	2%	
				manufacturing, mining, construction	18%	23%	
Personal income per capita, 1998	$24,754	$26,412	28	transportation, communication, utilities	11%	8%	
				wholesale and retail trade	16%	16%	
Federal spending				finance, insurance, real estate	15%	19%	
Total expenditures, 1998 (millions)	$8,253	$1,453,884	40	services	18%	20%	
R&D obligations, 1997 (millions)	$83	$68,424	44	government	14%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	82,981	23,741	0	5,761	47,959	5,026	494	44
Department of Agriculture	26,528	17,380	0	0	9,148	0	0	18
Department of Commerce	119	0	0	0	21	0	98	52
Department of Defense	7,996	1,183	0	4,348	2,465	0	0	48
Department of Energy	861	0	0	0	861	0	0	47
Department of Health & Human Services	28,627	4	0	918	22,615	5,026	64	39
Department of Interior	5,311	5,174	0	0	137	0	0	30
Department of Transportation	587	0	0	62	193	0	332	43
Environmental Protection Agency	0	0	0	0	0	0	0	na
National Aeronautics & Space Admin	2,355	0	0	312	2,043	0	0	42
National Science Foundation	10,597	0	0	121	10,476	0	0	38
State rank, total	44	44	na	49	38	33	46	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Nevada

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	1,575	483,162	47	Total R&D performance, 1997 (millions)	$517	$199,110	39
Doctoral engineers, 1997[1]	357	97,075	40	Industry R&D, 1997 (millions)	$380	$150,329	37
S&E doctorates awarded, 1998[1]	68	27,272	43	Academic R&D, 1997 (millions)	$88	$23,740	41
of which, in environmental sciences	25%	3%		of which, in life sciences	32%	56%	
in life sciences	19%	25%		in environmental sciences	28%	6%	
in psychology	18%	13%		in physical sciences	8%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	41	37,928	46	expenditures, 1996 (millions)	$515	$189,626	47
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	73	35,413	37
in doctorate-granting institutions	1,627	424,650	41	Patents issued to State residents, 1998	270	80,287	39
Population, 1998 (000s)	1,747	274,153	37	Gross State product, 1997 (billions)	$57	$8,152	34
Civilian labor force, 1998 (000s)	920	139,125	36	of which, agriculture	1%	2%	
				manufacturing, mining, construction	16%	23%	
Personal income per capita, 1998	$27,200	$26,412	15	transportation, communication, utilities	8%	8%	
				wholesale and retail trade	15%	16%	
Federal spending				finance, insurance, real estate	19%	19%	
Total expenditures, 1998 (millions)	$7,566	$1,453,884	41	services	33%	20%	
R&D obligations, 1997 (millions)	$295	$68,424	30	government	10%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	295,042	46,025	0	224,446	21,714	2,188	669	30
Department of Agriculture	2,214	438	0	80	1,664	32	0	51
Department of Commerce	161	59	0	2	100	0	0	51
Department of Defense	32,700	22,240	0	9,753	707	0	0	35
Department of Energy	208,845	0	0	205,675	2,249	921	0	8
Department of Health & Human Services	9,364	0	0	402	7,311	1,235	416	46
Department of Interior	10,716	10,221	0	0	495	0	0	14
Department of Transportation	6,583	0	0	6,330	0	0	253	17
Environmental Protection Agency	15,141	12,867	0	1,292	982	0	0	8
National Aeronautics & Space Admin	1,517	200	0	636	681	0	0	46
National Science Foundation	7,801	0	0	276	7,525	0	0	44
State rank, total	30	32	na	20	48	44	44	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

New Hampshire

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	2,126	483,162	42	Total R&D performance, 1997 (millions)	$799	$199,110	35
Doctoral engineers, 1997[1]	462	97,075	37	Industry R&D, 1997 (millions)	$652	$150,329	32
S&E doctorates awarded, 1998[1]	97	27,272	41	Academic R&D, 1997 (millions)	$108	$23,740	39
of which, in life sciences	39%	25%		of which, in life sciences	48%	56%	
in physical sciences	27%	14%		in environmental sciences	24%	6%	
in engineering	10%	22%		in engineering	9%	16%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	111	37,928	37	expenditures, 1996 (millions)	$925	$189,626	40
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	401	35,413	23
in doctorate-granting institutions	1,378	424,650	45	Patents issued to State residents, 1998	610	80,287	28
Population, 1998 (000s)	1,185	274,153	43	Gross State product, 1997 (billions)	$38	$8,152	41
Civilian labor force, 1998 (000s)	652	139,125	41	of which, agriculture	1%	2%	
				manufacturing, mining, construction	28%	23%	
Personal income per capita, 1998	$29,022	$26,412	8	transportation, communication, utilities	7%	8%	
				wholesale and retail trade	15%	16%	
Federal spending				finance, insurance, real estate	22%	19%	
Total expenditures, 1998 (millions)	$5,272	$1,453,884	46	services	18%	20%	
R&D obligations, 1997 (millions)	$279	$68,424	32	government	8%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	278,697	36,861	0	172,829	66,405	2,235	367	32
Department of Agriculture	4,399	2,071	0	0	2,310	7	11	49
Department of Commerce	3,094	188	0	1,662	1,244	0	0	29
Department of Defense	203,657	31,964	0	163,756	5,928	2,009	0	23
Department of Energy	921	0	0	0	921	0	0	46
Department of Health & Human Services	39,531	4	0	2,994	36,145	196	192	35
Department of Interior	1,615	1,489	0	0	126	0	0	51
Department of Transportation	574	398	0	35	0	0	141	44
Environmental Protection Agency	1,151	0	0	0	1,151	0	0	34
National Aeronautics & Space Admin	11,927	122	0	3,684	8,075	23	23	28
National Science Foundation	11,828	625	0	698	10,505	0	0	35
State rank, total	32	36	na	21	33	43	48	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

New Jersey

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	18,189	483,162	8	Total R&D performance, 1997 (millions)	$12,067	$199,110	4
Doctoral engineers, 1997[1]	4,232	97,075	6	Industry R&D, 1997 (millions)	$11,069	$150,329	3
S&E doctorates awarded, 1998[1]	562	27,272	16	Academic R&D, 1997 (millions)	$462	$23,740	16
of which, in engineering	25%	22%		of which, in life sciences	47%	56%	
in life sciences	23%	25%		in engineering	18%	16%	
in physical sciences	15%	14%		in physical sciences	12%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	638	37,928	19	expenditures, 1996 (millions)	$4,369	$189,626	13
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	1,107	35,413	9
in doctorate-granting institutions	10,432	424,650	11	Patents issued to State residents, 1998	3,770	80,287	4
Population, 1998 (000s)	8,115	274,153	9	Gross State product, 1997 (billions)	$294	$8,152	8
Civilian labor force, 1998 (000s)	4,155	139,125	9	of which, agriculture	1%	2%	
				manufacturing, mining, construction	18%	23%	
Personal income per capita, 1998	$33,937	$26,412	3	transportation, communication, utilities	10%	8%	
				wholesale and retail trade	17%	16%	
Federal spending				finance, insurance, real estate	23%	19%	
Total expenditures, 1998 (millions)	$40,373	$1,453,884	11	services	22%	20%	
R&D obligations, 1997 (millions)	$1,319	$68,424	15	government	10%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	1,318,793	459,286	54,446	588,294	198,521	15,641	2,605	15
Department of Agriculture	5,682	25	0	110	5,543	0	4	46
Department of Commerce	39,083	14,400	0	20,877	3,207	599	0	6
Department of Defense	864,900	393,639	2,093	439,713	29,432	23	0	11
Department of Energy	79,324	0	52,353	13,221	13,435	315	0	14
Department of Health & Human Services	108,475	9	0	9,247	86,817	10,740	1,662	24
Department of Interior	7,205	6,253	0	846	106	0	0	20
Department of Transportation	66,402	43,137	0	18,039	4,287	0	939	2
Environmental Protection Agency	3,794	0	0	440	1,035	2,319	0	21
National Aeronautics & Space Admin	94,717	1,657	0	82,518	10,362	180	0	11
National Science Foundation	49,211	166	0	3,283	44,297	1,465	0	15
State rank, total	15	9	12	14	20	22	25	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

New Mexico

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	6,446	483,162	25	Total R&D performance, 1997 (millions)	$3,028	$199,110	19
Doctoral engineers, 1997[1]	2,124	97,075	14	Industry R&D, 1997 (millions)	$1,310	$150,329	21
S&E doctorates awarded, 1998[1]	202	27,272	33	Academic R&D, 1997 (millions)	$219	$23,740	29
of which, in engineering	28%	22%		of which, in engineering	42%	16%	
in life sciences	21%	25%		in life sciences	25%	56%	
in physical sciences	19%	14%		in physical sciences	6%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	66	37,928	43	expenditures, 1996 (millions)	$1,361	$189,626	36
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	686	35,413	15
in doctorate-granting institutions	3,252	424,650	34	Patents issued to State residents, 1998	343	80,287	36
Population, 1998 (000s)	1,737	274,153	38	Gross State product, 1997 (billions)	$45	$8,152	39
Civilian labor force, 1998 (000s)	831	139,125	38	of which, agriculture	2%	2%	
				manufacturing, mining, construction	29%	23%	
Personal income per capita, 1998	$19,936	$26,412	49	transportation, communication, utilities	7%	8%	
				wholesale and retail trade	14%	16%	
Federal spending				finance, insurance, real estate	14%	19%	
Total expenditures, 1998 (millions)	$12,933	$1,453,884	35	services	17%	20%	
R&D obligations, 1997 (millions)	$1,933	$68,424	11	government	17%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	1,933,123	366,253	1,210,714	252,260	92,218	10,362	1,316	11
Department of Agriculture	7,165	3,328	0	0	3,831	6	0	42
Department of Commerce	548	0	3	412	0	133	0	42
Department of Defense	675,057	334,298	99,375	214,136	26,249	999	0	13
Department of Energy	1,117,476	10,169	1,090,900	9,360	3,557	3,490	0	1
Department of Health & Human Services	49,410	1,032	13,447	2,723	27,279	4,020	909	33
Department of Interior	6,329	6,101	0	67	161	0	0	28
Department of Transportation	12,345	0	5,922	3,529	2,487	0	407	9
Environmental Protection Agency	671	0	0	271	200	200	0	40
National Aeronautics & Space Admin	51,401	11,220	971	20,043	18,750	417	0	14
National Science Foundation	12,721	105	96	1,719	9,704	1,097	0	34
State rank, total	11	10	2	19	31	27	34	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

New York

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	37,841	483,162	2	Total R&D performance, 1997 (millions)	$12,307	$199,110	3
Doctoral engineers, 1997[1]	6,009	97,075	3	Industry R&D, 1997 (millions)	$9,939	$150,329	4
S&E doctorates awarded, 1998[1]	2,377	27,272	2	Academic R&D, 1997 (millions)	$1,784	$23,740	2
of which, in life sciences	26%	25%		of which, in life sciences	66%	56%	
in social sciences	18%	15%		in engineering	11%	16%	
in psychology	17%	13%		in physical sciences	9%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	3,094	37,928	3	expenditures, 1996 (millions)	$17,801	$189,626	2
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	1,606	35,413	5
in doctorate-granting institutions	37,883	424,650	2	Patents issued to State residents, 1998	6,319	80,287	2
Population, 1998 (000s)	18,175	274,153	3	Gross State product, 1997 (billions)	$652	$8,152	2
Civilian labor force, 1998 (000s)	8,870	139,125	3	of which, agriculture	0%	2%	
				manufacturing, mining, construction	14%	23%	
Personal income per capita, 1998	$31,734	$26,412	5	transportation, communication, utilities	8%	8%	
				wholesale and retail trade	13%	16%	
Federal spending				finance, insurance, real estate	31%	19%	
Total expenditures, 1998 (millions)	$99,766	$1,453,884	2	services	23%	20%	
R&D obligations, 1997 (millions)	$2,471	$68,424	8	government	11%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	2,471,213	136,215	216,934	770,608	1,062,686	208,675	76,095	8
Department of Agriculture	33,864	15,848	0	172	16,528	1,316	0	13
Department of Commerce	12,554	641	13	5,008	6,239	653	0	20
Department of Defense	621,407	100,122	677	461,269	55,482	3,857	0	14
Department of Energy	516,968	5,289	211,221	246,080	51,901	2,477	0	3
Department of Health & Human Services	1,015,997	2,239	3,845	26,778	720,661	188,505	73,969	4
Department of Interior	9,181	8,858	0	59	264	0	0	16
Department of Transportation	7,939	0	0	5,607	0	428	1,904	16
Environmental Protection Agency	8,990	0	0	2,170	4,696	2,124	0	17
National Aeronautics & Space Admin	50,219	3,218	30	18,715	27,401	825	30	15
National Science Foundation	194,094	0	1,148	4,750	179,514	8,490	192	2
State rank, total	8	20	6	12	2	3	1	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

North Carolina

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	13,651	483,162	11	Total R&D performance, 1997 (millions)	$4,667	$199,110	13
Doctoral engineers, 1997[1]	1,832	97,075	15	Industry R&D, 1997 (millions)	$3,590	$150,329	11
S&E doctorates awarded, 1998[1]	740	27,272	10	Academic R&D, 1997 (millions)	$786	$23,740	9
of which, in life sciences	32%	25%		of which, in life sciences	71%	56%	
in engineering	19%	22%		in engineering	10%	16%	
in physical sciences	14%	14%		in social sciences	5%	4%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	1,339	37,928	7	expenditures, 1996 (millions)	$5,979	$189,626	9
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	409	35,413	22
in doctorate-granting institutions	9,655	424,650	12	Patents issued to State residents, 1998	1,614	80,287	15
Population, 1998 (000s)	7,546	274,153	11	Gross State product, 1997 (billions)	$219	$8,152	12
Civilian labor force, 1998 (000s)	3,794	139,125	11	of which, agriculture	2%	2%	
				manufacturing, mining, construction	31%	23%	
Personal income per capita, 1998	$24,036	$26,412	32	transportation, communication, utilities	8%	8%	
				wholesale and retail trade	15%	16%	
Federal spending				finance, insurance, real estate	15%	19%	
Total expenditures, 1998 (millions)	$35,677	$1,453,884	14	services	16%	20%	
R&D obligations, 1997 (millions)	$901	$68,424	19	government	13%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	900,947	229,610	0	132,887	468,601	61,427	8,422	19
Department of Agriculture	30,130	14,240	0	5	15,857	19	9	16
Department of Commerce	20,300	4,963	0	12,055	2,694	160	428	11
Department of Defense	150,960	51,497	0	67,639	30,115	1,235	474	27
Department of Energy	13,267	308	0	49	11,148	1,762	0	28
Department of Health & Human Services	481,292	70,151	0	21,704	344,107	43,553	1,777	7
Department of Interior	6,761	6,100	0	309	352	0	0	21
Department of Transportation	8,257	0	0	0	1,773	750	5,734	15
Environmental Protection Agency	125,216	82,351	0	27,352	8,253	7,260	0	1
National Aeronautics & Space Admin	15,173	0	0	1,026	9,125	5,022	0	26
National Science Foundation	49,591	0	0	2,748	45,177	1,666	0	14
State rank, total	19	12	na	26	7	11	3	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

North Dakota

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	1,360	483,162	48	Total R&D performance, 1997 (millions)	$116	$199,110	49
Doctoral engineers, 1997[1]	205	97,075	46	Industry R&D, 1997 (millions)	$33	$150,329	48
S&E doctorates awarded, 1998[1]	58	27,272	46	Academic R&D, 1997 (millions)	$56	$23,740	49
of which, in life sciences	52%	25%		of which, in life sciences	54%	56%	
in psychology	21%	13%		in engineering	27%	16%	
in physical sciences	12%	14%		in physical sciences	8%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	52	37,928	44	expenditures, 1996 (millions)	$486	$189,626	48
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	31	35,413	46
in doctorate-granting institutions	1,070	424,650	48	Patents issued to State residents, 1998	65	80,287	48
Population, 1998 (000s)	638	274,153	48	Gross State product, 1997 (billions)	$16	$8,152	51
Civilian labor force, 1998 (000s)	347	139,125	48	of which, agriculture	7%	2%	
				manufacturing, mining, construction	17%	23%	
Personal income per capita, 1998	$21,675	$26,412	39	transportation, communication, utilities	10%	8%	
				wholesale and retail trade	19%	16%	
Federal spending				finance, insurance, real estate	13%	19%	
Total expenditures, 1998 (millions)	$4,131	$1,453,884	49	services	18%	20%	
R&D obligations, 1997 (millions)	$53	$68,424	48	government	15%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	53,015	26,401	0	312	23,655	449	2,198	48
Department of Agriculture	25,018	19,468	0	0	5,550	0	0	19
Department of Commerce	358	0	0	0	358	0	0	45
Department of Defense	2,234	491	0	0	1,743	0	0	50
Department of Energy	3,746	0	0	0	3,746	0	0	37
Department of Health & Human Services	3,540	0	0	7	2,819	449	265	48
Department of Interior	6,485	6,442	0	3	20	0	20	25
Department of Transportation	5,843	0	0	86	3,844	0	1,913	19
Environmental Protection Agency	2,310	0	0	0	2,310	0	0	25
National Aeronautics & Space Admin	1,000	0	0	65	935	0	0	48
National Science Foundation	2,481	0	0	151	2,330	0	0	52
State rank, total	48	42	na	51	46	50	31	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Ohio

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	16,656	483,162	9	Total R&D performance, 1997 (millions)	$7,145	$199,110	11
Doctoral engineers, 1997[1]	4,328	97,075	4	Industry R&D, 1997 (millions)	$5,608	$150,329	10
S&E doctorates awarded, 1998[1]	1,124	27,272	7	Academic R&D, 1997 (millions)	$764	$23,740	11
of which, in engineering	27%	22%		of which, in life sciences	55%	56%	
in life sciences	24%	25%		in engineering	24%	16%	
in physical sciences	17%	14%		in physical sciences	8%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	1,000	37,928	11	expenditures, 1996 (millions)	$6,842	$189,626	7
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	1,100	35,413	10
in doctorate-granting institutions	19,424	424,650	7	Patents issued to State residents, 1998	3,273	80,287	9
Population, 1998 (000s)	11,209	274,153	7	Gross State product, 1997 (billions)	$321	$8,152	7
Civilian labor force, 1998 (000s)	5,678	139,125	7	of which, agriculture	1%	2%	
				manufacturing, mining, construction	30%	23%	
Personal income per capita, 1998	$25,134	$26,412	22	transportation, communication, utilities	7%	8%	
				wholesale and retail trade	17%	16%	
Federal spending				finance, insurance, real estate	16%	19%	
Total expenditures, 1998 (millions)	$52,006	$1,453,884	8	services	18%	20%	
R&D obligations, 1997 (millions)	$1,880	$68,424	13	government	10%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	1,879,784	681,170	0	776,770	327,760	91,782	2,302	13
Department of Agriculture	15,303	6,376	0	10	8,876	34	7	33
Department of Commerce	10,267	72	0	8,853	938	404	0	22
Department of Defense	943,438	382,878	0	513,885	28,991	17,684	0	10
Department of Energy	17,781	0	0	10,187	7,594	0	0	26
Department of Health & Human Services	326,484	32,593	0	11,747	223,213	58,258	673	9
Department of Interior	3,635	3,394	0	11	230	0	0	41
Department of Transportation	12,712	4,377	0	5,009	1,869	70	1,387	8
Environmental Protection Agency	61,580	48,896	0	6,279	2,313	4,092	0	3
National Aeronautics & Space Admin	448,477	202,584	0	219,620	15,052	10,986	235	7
National Science Foundation	40,107	0	0	1,169	38,684	254	0	19
State rank, total	13	5	na	10	11	9	29	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Oklahoma

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	4,220	483,162	31	Total R&D performance, 1997 (millions)	$644	$199,110	36
Doctoral engineers, 1997[1]	1,086	97,075	27	Industry R&D, 1997 (millions)	$428	$150,329	36
S&E doctorates awarded, 1998[1]	217	27,272	31	Academic R&D, 1997 (millions)	$163	$23,740	34
of which, in engineering	26%	22%		of which, in life sciences	42%	56%	
in life sciences	25%	25%		in engineering	19%	16%	
in psychology	14%	13%		in environmental sciences	12%	6%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	191	37,928	32	expenditures, 1996 (millions)	$1,656	$189,626	33
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	98	35,413	32
in doctorate-granting institutions	4,254	424,650	30	Patents issued to State residents, 1998	488	80,287	30
Population, 1998 (000s)	3,347	274,153	28	Gross State product, 1997 (billions)	$77	$8,152	30
Civilian labor force, 1998 (000s)	1,627	139,125	29	of which, agriculture	3%	2%	
				manufacturing, mining, construction	25%	23%	
Personal income per capita, 1998	$21,072	$26,412	45	transportation, communication, utilities	10%	8%	
				wholesale and retail trade	16%	16%	
Federal spending				finance, insurance, real estate	13%	19%	
Total expenditures, 1998 (millions)	$18,205	$1,453,884	29	services	18%	20%	
R&D obligations, 1997 (millions)	$160	$68,424	39	government	16%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	160,356	44,238	0	53,782	52,831	8,646	859	39
Department of Agriculture	17,271	9,370	0	0	7,901	0	0	29
Department of Commerce	8,075	7,336	0	588	151	0	0	24
Department of Defense	38,219	6,674	0	27,734	3,771	0	40	33
Department of Energy	28,522	1,490	0	23,658	3,069	305	0	22
Department of Health & Human Services	32,408	9	0	112	24,052	8,116	119	37
Department of Interior	3,763	3,500	0	0	263	0	0	39
Department of Transportation	9,808	8,081	0	1,027	0	0	700	14
Environmental Protection Agency	9,088	7,720	0	117	1,251	0	0	16
National Aeronautics & Space Admin	2,049	58	0	310	1,681	0	0	43
National Science Foundation	11,153	0	0	236	10,692	225	0	37
State rank, total	39	33	na	32	37	29	41	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Oregon

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	6,471	483,162	24	Total R&D performance, 1997 (millions)	$1,520	$199,110	27
Doctoral engineers, 1997[1]	1,127	97,075	26	Industry R&D, 1997 (millions)	$1,102	$150,329	26
S&E doctorates awarded, 1998[1]	283	27,272	29	Academic R&D, 1997 (millions)	$291	$23,740	27
of which, in life sciences	43%	25%		of which, in life sciences	65%	56%	
in engineering	13%	22%		in environmental sciences	12%	6%	
in physical sciences	13%	14%		in engineering	7%	16%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	318	37,928	27	expenditures, 1996 (millions)	$2,205	$189,626	28
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	466	35,413	20
in doctorate-granting institutions	4,107	424,650	31	Patents issued to State residents, 1998	1,184	80,287	21
Population, 1998 (000s)	3,282	274,153	29	Gross State product, 1997 (billions)	$98	$8,152	27
Civilian labor force, 1998 (000s)	1,762	139,125	27	of which, agriculture	3%	2%	
				manufacturing, mining, construction	30%	23%	
Personal income per capita, 1998	$24,766	$26,412	27	transportation, communication, utilities	7%	8%	
				wholesale and retail trade	16%	16%	
Federal spending				finance, insurance, real estate	15%	19%	
Total expenditures, 1998 (millions)	$15,119	$1,453,884	31	services	17%	20%	
R&D obligations, 1997 (millions)	$320	$68,424	29	government	11%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	319,587	90,017	0	28,339	157,943	37,112	6,176	29
Department of Agriculture	37,697	22,609	0	82	14,714	278	14	10
Department of Commerce	20,875	15,548	0	1,657	2,465	0	1,205	10
Department of Defense	22,991	635	0	12,104	10,252	0	0	38
Department of Energy	46,084	28,695	0	135	16,954	300	0	19
Department of Health & Human Services	121,710	13	0	7,500	73,740	36,129	4,328	23
Department of Interior	9,802	9,605	0	94	103	0	0	15
Department of Transportation	1,622	0	0	385	608	0	629	30
Environmental Protection Agency	21,840	12,867	0	4,058	4,815	100	0	4
National Aeronautics & Space Admin	6,565	0	0	1,223	5,134	208	0	35
National Science Foundation	30,401	45	0	1,101	29,158	97	0	23
State rank, total	29	23	na	38	24	14	8	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Pennsylvania

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	22,375	483,162	4	Total R&D performance, 1997 (millions)	$8,209	$199,110	7
Doctoral engineers, 1997[1]	4,322	97,075	5	Industry R&D, 1997 (millions)	$6,609	$150,329	8
S&E doctorates awarded, 1998[1]	1,364	27,272	6	Academic R&D, 1997 (millions)	$1,241	$23,740	6
of which, in engineering	30%	22%		of which, in life sciences	57%	56%	
in life sciences	20%	25%		in engineering	17%	16%	
in social sciences	17%	15%		in mathematics and computer sciences	7%	4%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	2,319	37,928	5	expenditures, 1996 (millions)	$11,305	$189,626	3
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	1,178	35,413	8
in doctorate-granting institutions	19,667	424,650	6	Patents issued to State residents, 1998	3,369	80,287	8
Population, 1998 (000s)	12,001	274,153	6	Gross State product, 1997 (billions)	$340	$8,152	6
Civilian labor force, 1998 (000s)	5,936	139,125	6	of which, agriculture	1%	2%	
				manufacturing, mining, construction	25%	23%	
Personal income per capita, 1998	$26,792	$26,412	17	transportation, communication, utilities	9%	8%	
				wholesale and retail trade	15%	16%	
Federal spending				finance, insurance, real estate	19%	19%	
Total expenditures, 1998 (millions)	$67,350	$1,453,884	5	services	22%	20%	
R&D obligations, 1997 (millions)	$1,894	$68,424	12	government	10%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	1,893,867	151,216	16,395	775,429	767,992	175,456	7,379	12
Department of Agriculture	40,848	28,859	0	0	11,730	259	0	9
Department of Commerce	27,121	240	0	24,089	1,327	850	615	9
Department of Defense	614,966	52,505	16,395	425,169	90,231	30,666	0	15
Department of Energy	351,742	42,843	0	277,311	21,035	5,363	5,190	5
Department of Health & Human Services	684,859	17,778	0	13,792	529,543	123,649	97	5
Department of Interior	8,710	7,828	0	109	758	15	0	18
Department of Transportation	6,213	70	0	2,604	2,062	0	1,477	18
Environmental Protection Agency	6,343	0	0	809	5,200	334	0	19
National Aeronautics & Space Admin	49,464	1,093	0	30,402	16,480	1,489	0	16
National Science Foundation	103,601	0	0	1,144	89,626	12,831	0	6
State rank, total	12	18	17	11	4	5	4	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Puerto Rico

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	612	483,162	52	Total R&D performance, 1997 (millions)	na	$199,110	na
Doctoral engineers, 1997[1]	160	97,075	49	Industry R&D, 1997 (millions)	na	$150,329	na
S&E doctorates awarded, 1998[1]	68	27,272	43	Academic R&D, 1997 (millions)	$76	$23,740	42
of which, in psychology	82%	13%		of which, in life sciences	76%	56%	
in life sciences	9%	25%		in engineering	7%	16%	
in physical sciences	4%	14%		in environmental sciences	7%	6%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	14	37,928	50	expenditures, 1996 (millions)	$1,035	$189,626	39
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	3	35,413	52
in doctorate-granting institutions	2,737	424,650	37	Patents issued to State residents, 1998	20	80,287	52
Population, 1998 (000s)	3,857	274,153	26	Gross State product, 1997 (billions)	$49	$8,152	38
Civilian labor force, 1998 (000s)	1,311	139,125	32	of which, agriculture	1%	2%	
				manufacturing, mining, construction	43%	23%	
Personal income per capita, 1998	$8,817	$26,412	52	transportation, communication, utilities	8%	8%	
				wholesale and retail trade	13%	16%	
Federal spending				finance, insurance, real estate	13%	19%	
Total expenditures, 1998 (millions)	$11,119	$1,453,884	36	services	11%	20%	
R&D obligations, 1997 (millions)	$59	$68,424	47	government	11%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	58,943	11,011	8,244	59	38,803	10	816	47
Department of Agriculture	9,307	5,025	0	10	4,262	10	0	38
Department of Commerce	363	0	0	0	363	0	0	44
Department of Defense	2,023	1	0	17	2,005	0	0	51
Department of Energy	784	0	0	0	784	0	0	48
Department of Health & Human Services	25,181	858	0	0	23,704	0	619	42
Department of Interior	5,178	5,127	0	0	51	0	0	31
Department of Transportation	197	0	0	0	0	0	197	51
Environmental Protection Agency	85	0	0	0	85	0	0	48
National Aeronautics & Space Admin	1,742	0	0	0	1,742	0	0	0
National Science Foundation	14,083	0	8,244	32	5,807	0	0	31
State rank, total	47	47	18	52	40	52	42	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Rhode Island

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	2,184	483,162	41	Total R&D performance, 1997 (millions)	$1,040	$199,110	32
Doctoral engineers, 1997[1]	518	97,075	36	Industry R&D, 1997 (millions)	$704	$150,329	31
S&E doctorates awarded, 1998[1]	183	27,272	36	Academic R&D, 1997 (millions)	$112	$23,740	38
of which, in physical sciences	23%	14%		of which, in life sciences	31%	56%	
in social sciences	17%	15%		in environmental sciences	25%	6%	
in mathematics and computer sciences	13%	8%		in engineering	12%	16%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	155	37,928	33	expenditures, 1996 (millions)	$1,060	$189,626	38
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	94	35,413	33
in doctorate-granting institutions	1,777	424,650	40	Patents issued to State residents, 1998	280	80,287	38
Population, 1998 (000s)	988	274,153	44	Gross State product, 1997 (billions)	$28	$8,152	46
Civilian labor force, 1998 (000s)	498	139,125	44	of which, agriculture	1%	2%	
				manufacturing, mining, construction	19%	23%	
Personal income per capita, 1998	$26,797	$26,412	16	transportation, communication, utilities	7%	8%	
				wholesale and retail trade	14%	16%	
Federal spending				finance, insurance, real estate	25%	19%	
Total expenditures, 1998 (millions)	$6,039	$1,453,884	43	services	22%	20%	
R&D obligations, 1997 (millions)	$404	$68,424	26	government	12%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	403,844	202,192	0	112,220	66,291	22,121	1,020	26
Department of Agriculture	1,948	2	0	0	1,902	44	0	52
Department of Commerce	4,954	1,075	0	1,650	2,219	10	0	27
Department of Defense	307,758	188,965	0	108,377	10,325	91	0	20
Department of Energy	2,855	0	0	0	2,847	8	0	41
Department of Health & Human Services	49,652	0	0	1,700	26,159	20,948	845	32
Department of Interior	1,732	1,238	0	0	489	5	0	50
Department of Transportation	796	438	0	183	0	0	175	41
Environmental Protection Agency	10,753	10,296	0	57	400	0	0	13
National Aeronautics & Space Admin	3,573	178	0	243	2,894	258	0	39
National Science Foundation	19,823	0	0	10	19,056	757	0	26
State rank, total	26	14	na	28	34	19	37	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

South Carolina

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	4,762	483,162	29	Total R&D performance, 1997 (millions)	$1,040	$199,110	32
Doctoral engineers, 1997[1]	798	97,075	31	Industry R&D, 1997 (millions)	$783	$150,329	30
S&E doctorates awarded, 1998[1]	211	27,272	32	Academic R&D, 1997 (millions)	$219	$23,740	30
of which, in life sciences	36%	25%		of which, in life sciences	53%	56%	
in engineering	18%	22%		in engineering	18%	16%	
in physical sciences	13%	14%		in environmental sciences	7%	6%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	249	37,928	30	expenditures, 1996 (millions)	$2,261	$189,626	27
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	42	35,413	44
in doctorate-granting institutions	3,931	424,650	32	Patents issued to State residents, 1998	570	80,287	29
Population, 1998 (000s)	3,836	274,153	27	Gross State product, 1997 (billions)	$93	$8,152	28
Civilian labor force, 1998 (000s)	1,959	139,125	25	of which, agriculture	1%	2%	
				manufacturing, mining, construction	30%	23%	
Personal income per capita, 1998	$21,309	$26,412	43	transportation, communication, utilities	8%	8%	
				wholesale and retail trade	17%	16%	
Federal spending				finance, insurance, real estate	14%	19%	
Total expenditures, 1998 (millions)	$19,870	$1,453,884	27	services	16%	20%	
R&D obligations, 1997 (millions)	$167	$68,424	38	government	15%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	166,607	34,019	17,184	13,252	94,954	3,799	3,399	38
Department of Agriculture	14,399	7,998	0	0	6,351	50	0	34
Department of Commerce	14,342	6,538	0	5,289	2,246	269	0	17
Department of Defense	48,242	16,142	9	6,040	24,293	1,758	0	32
Department of Energy	29,922	6	17,175	500	10,825	1,416	0	21
Department of Health & Human Services	39,756	4	0	1,189	35,537	250	2,776	34
Department of Interior	3,432	3,331	0	46	45	10	0	42
Department of Transportation	924	0	0	41	305	0	578	37
Environmental Protection Agency	1,239	0	0	0	1,239	0	0	32
National Aeronautics & Space Admin	2,829	0	0	60	2,769	0	0	41
National Science Foundation	11,522	0	0	87	11,344	46	45	36
State rank, total	38	38	16	42	30	36	23	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

South Dakota

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	1,048	483,162	50	Total R&D performance, 1997 (millions)	$71	$199,110	51
Doctoral engineers, 1997[1]	103	97,075	52	Industry R&D, 1997 (millions)	$26	$150,329	50
S&E doctorates awarded, 1998[1]	24	27,272	52	Academic R&D, 1997 (millions)	$25	$23,740	52
of which, in psychology	33%	13%		of which, in life sciences	60%	56%	
in life sciences	33%	25%		in environmental sciences	14%	6%	
in social sciences	17%	15%		in engineering	10%	16%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	12	37,928	52	expenditures, 1996 (millions)	$336	$189,626	51
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	28	35,413	48
in doctorate-granting institutions	1,161	424,650	46	Patents issued to State residents, 1998	50	80,287	50
Population, 1998 (000s)	738	274,153	47	Gross State product, 1997 (billions)	$20	$8,152	48
Civilian labor force, 1998 (000s)	398	139,125	46	of which, agriculture	9%	2%	
				manufacturing, mining, construction	18%	23%	
Personal income per capita, 1998	$22,114	$26,412	38	transportation, communication, utilities	8%	8%	
				wholesale and retail trade	16%	16%	
Federal spending				finance, insurance, real estate	21%	19%	
Total expenditures, 1998 (millions)	$4,319	$1,453,884	48	services	16%	20%	
R&D obligations, 1997 (millions)	$42	$68,424	51	government	12%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	41,955	19,307	0	6,480	14,075	1,500	593	51
Department of Agriculture	6,967	3,676	0	0	3,291	0	0	44
Department of Commerce	334	70	0	0	55	0	209	46
Department of Defense	3,015	585	0	480	1,950	0	0	49
Department of Energy	79	0	0	79	0	0	0	50
Department of Health & Human Services	2,855	766	0	380	1,584	0	125	49
Department of Interior	12,347	7,332	0	4,887	128	0	0	10
Department of Transportation	367	0	0	108	0	0	259	49
Environmental Protection Agency	0	0	0	0	0	0	0	na
National Aeronautics & Space Admin	8,905	6,878	0	102	425	1,500	0	31
National Science Foundation	7,086	0	0	444	6,642	0	0	46
State rank, total	51	45	na	47	50	46	45	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Tennessee

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	8,065	483,162	21	Total R&D performance, 1997 (millions)	$1,566	$199,110	26
Doctoral engineers, 1997[1]	1,500	97,075	18	Industry R&D, 1997 (millions)	$1,089	$150,329	27
S&E doctorates awarded, 1998[1]	333	27,272	25	Academic R&D, 1997 (millions)	$330	$23,740	26
of which, in life sciences	33%	25%		of which, in life sciences	61%	56%	
in engineering	19%	22%		in engineering	16%	16%	
in social sciences	16%	15%		in physical sciences	7%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	570	37,928	21	expenditures, 1996 (millions)	$3,588	$189,626	19
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	341	35,413	24
in doctorate-granting institutions	7,154	424,650	20	Patents issued to State residents, 1998	783	80,287	25
Population, 1998 (000s)	5,431	274,153	17	Gross State product, 1997 (billions)	$147	$8,152	20
Civilian labor force, 1998 (000s)	2,760	139,125	18	of which, agriculture	1%	2%	
				manufacturing, mining, construction	26%	23%	
Personal income per capita, 1998	$23,559	$26,412	34	transportation, communication, utilities	8%	8%	
				wholesale and retail trade	19%	16%	
Federal spending				finance, insurance, real estate	14%	19%	
Total expenditures, 1998 (millions)	$30,497	$1,453,884	17	services	20%	20%	
R&D obligations, 1997 (millions)	$566	$68,424	24	government	12%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	566,242	77,836	237,525	44,089	179,732	25,583	1,477	24
Department of Agriculture	7,961	1	0	0	7,960	0	0	40
Department of Commerce	1,198	811	8	0	379	0	0	38
Department of Defense	93,423	62,585	4,864	15,772	10,202	0	0	30
Department of Energy	248,998	1,166	229,057	10,872	7,793	110	0	7
Department of Health & Human Services	160,546	1,276	276	1,962	131,659	25,373	0	19
Department of Interior	4,403	3,986	0	17	400	0	0	35
Department of Transportation	2,617	933	120	24	188	0	1,352	28
Environmental Protection Agency	1,203	0	0	339	864	0	0	33
National Aeronautics & Space Admin	28,629	6,829	3,050	13,244	5,381	0	125	19
National Science Foundation	17,264	249	150	1,859	14,906	100	0	29
State rank, total	24	25	5	33	23	18	32	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Texas

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	24,871	483,162	3	Total R&D performance, 1997 (millions)	$9,487	$199,110	6
Doctoral engineers, 1997[1]	6,725	97,075	2	Industry R&D, 1997 (millions)	$7,265	$150,329	6
S&E doctorates awarded, 1998[1]	1,667	27,272	3	Academic R&D, 1997 (millions)	$1,581	$23,740	3
of which, in life sciences	27%	25%		of which, in life sciences	60%	56%	
in engineering	24%	22%		in engineering	17%	16%	
in psychology	13%	13%		in environmental sciences	8%	6%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	2,354	37,928	4	expenditures, 1996 (millions)	$10,360	$189,626	4
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	1,253	35,413	7
in doctorate-granting institutions	27,481	424,650	3	Patents issued to State residents, 1998	5,575	80,287	3
Population, 1998 (000s)	19,760	274,153	2	Gross State product, 1997 (billions)	$602	$8,152	3
Civilian labor force, 1998 (000s)	10,118	139,125	2	of which, agriculture	1%	2%	
				manufacturing, mining, construction	27%	23%	
Personal income per capita, 1998	$24,957	$26,412	26	transportation, communication, utilities	11%	8%	
				wholesale and retail trade	16%	16%	
Federal spending				finance, insurance, real estate	15%	19%	
Total expenditures, 1998 (millions)	$92,019	$1,453,884	3	services	18%	20%	
R&D obligations, 1997 (millions)	$3,640	$68,424	5	government	11%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	3,640,162	559,634	1,054	2,336,624	656,705	80,394	5,751	5
Department of Agriculture	61,263	43,311	0	79	17,843	30	0	4
Department of Commerce	13,007	3,023	0	6,820	2,864	0	300	18
Department of Defense	1,217,616	133,659	1,054	1,029,214	51,303	2,386	0	8
Department of Energy	24,896	0	0	4,928	19,646	322	0	25
Department of Health & Human Services	495,579	2,159	0	12,390	444,213	35,996	821	6
Department of Interior	14,283	11,254	0	812	1,916	301	0	9
Department of Transportation	9,831	0	0	4,309	1,272	0	4,250	13
Environmental Protection Agency	11,742	0	0	1,873	8,000	1,669	200	11
National Aeronautics & Space Admin	1,713,888	366,228	0	1,274,612	33,487	39,381	180	2
National Science Foundation	78,057	0	0	1,587	76,161	309	0	8
State rank, total	5	8	19	5	6	10	11	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Utah

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	3,963	483,162	33	Total R&D performance, 1997 (millions)	$1,381	$199,110	28
Doctoral engineers, 1997[1]	1,389	97,075	21	Industry R&D, 1997 (millions)	$1,027	$150,329	28
S&E doctorates awarded, 1998[1]	262	27,272	30	Academic R&D, 1997 (millions)	$234	$23,740	28
of which, in engineering	25%	22%		of which, in life sciences	51%	56%	
in life sciences	23%	25%		in engineering	21%	16%	
in psychology	15%	13%		in physical sciences	8%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	357	37,928	26	expenditures, 1996 (millions)	$1,970	$189,626	31
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	423	35,413	21
in doctorate-granting institutions	4,609	424,650	29	Patents issued to State residents, 1998	666	80,287	26
Population, 1998 (000s)	2,100	274,153	35	Gross State product, 1997 (billions)	$55	$8,152	35
Civilian labor force, 1998 (000s)	1,063	139,125	35	of which, agriculture	1%	2%	
				manufacturing, mining, construction	24%	23%	
Personal income per capita, 1998	$21,019	$26,412	46	transportation, communication, utilities	9%	8%	
				wholesale and retail trade	17%	16%	
Federal spending				finance, insurance, real estate	16%	19%	
Total expenditures, 1998 (millions)	$8,728	$1,453,884	38	services	19%	20%	
R&D obligations, 1997 (millions)	$320	$68,424	28	government	14%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by state, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	319,826	117,231	0	68,306	130,820	2,691	778	28
Department of Agriculture	13,064	7,065	0	0	5,999	0	0	36
Department of Commerce	1,747	0	0	1,295	452	0	0	31
Department of Defense	185,481	106,020	0	58,658	20,803	0	0	25
Department of Energy	6,027	0	0	821	4,501	705	0	33
Department of Health & Human Services	77,998	38	0	3,570	73,491	809	90	27
Department of Interior	4,086	3,861	0	58	167	0	0	36
Department of Transportation	1,531	0	0	51	14	778	688	32
Environmental Protection Agency	748	0	0	290	458	0	0	37
National Aeronautics & Space Admin	10,177	247	0	2,405	7,375	150	0	30
National Science Foundation	18,967	0	0	1,158	17,560	249	0	27
State rank, total	28	21	na	31	28	40	43	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Vermont

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	1,752	483,162	46	Total R&D performance, 1997 (millions)	$314	$199,110	42
Doctoral engineers, 1997[1]	204	97,075	47	Industry R&D, 1997 (millions)	$246	$150,329	39
S&E doctorates awarded, 1998[1]	48	27,272	49	Academic R&D, 1997 (millions)	$60	$23,740	48
of which, in life sciences	42%	25%		of which, in life sciences	88%	56%	
in psychology	31%	13%		in engineering	3%	16%	
in engineering	19%	22%		in physical sciences	2%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	51	37,928	45	expenditures, 1996 (millions)	$635	$189,626	44
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	103	35,413	31
in doctorate-granting institutions	624	424,650	51	Patents issued to State residents, 1998	322	80,287	37
Population, 1998 (000s)	591	274,153	50	Gross State product, 1997 (billions)	$15	$8,152	52
Civilian labor force, 1998 (000s)	330	139,125	49	of which, agriculture	2%	2%	
				manufacturing, mining, construction	23%	23%	
Personal income per capita, 1998	$24,175	$26,412	31	transportation, communication, utilities	8%	8%	
				wholesale and retail trade	16%	16%	
Federal spending				finance, insurance, real estate	18%	19%	
Total expenditures, 1998 (millions)	$2,895	$1,453,884	51	services	21%	20%	
R&D obligations, 1997 (millions)	$50	$68,424	49	government	12%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	49,885	7,400	0	7,614	32,852	955	1,064	49
Department of Agriculture	5,584	1,544	0	0	4,029	0	11	47
Department of Commerce	223	24	0	52	40	0	107	49
Department of Defense	10,338	3,948	0	5,768	622	0	0	45
Department of Energy	250	0	0	0	250	0	0	49
Department of Health & Human Services	25,344	0	0	1,061	23,519	764	0	41
Department of Interior	1,920	1,884	0	8	28	0	0	48
Department of Transportation	1,154	0	0	39	169	0	946	35
Environmental Protection Agency	371	0	0	0	180	191	0	43
National Aeronautics & Space Admin	790	0	0	559	231	0	0	49
National Science Foundation	3,911	0	0	127	3,784	0	0	49
State rank, total	49	50	na	45	42	49	36	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Virginia

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	14,219	483,162	10	Total R&D performance, 1997 (millions)	$4,136	$199,110	14
Doctoral engineers, 1997[1]	3,104	97,075	11	Industry R&D, 1997 (millions)	$1,767	$150,329	18
S&E doctorates awarded, 1998[1]	619	27,272	14	Academic R&D, 1997 (millions)	$455	$23,740	17
of which, in engineering	25%	22%		of which, in life sciences	50%	56%	
in life sciences	25%	25%		in engineering	19%	16%	
in psychology	13%	13%		in environmental sciences	13%	6%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	634	37,928	20	expenditures, 1996 (millions)	$4,410	$189,626	12
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	1,952	35,413	3
in doctorate-granting institutions	13,020	424,650	10	Patents issued to State residents, 1998	1,051	80,287	22
Population, 1998 (000s)	6,791	274,153	12	Gross State product, 1997 (billions)	$211	$8,152	13
Civilian labor force, 1998 (000s)	3,488	139,125	12	of which, agriculture	1%	2%	
				manufacturing, mining, construction	20%	23%	
Personal income per capita, 1998	$27,385	$26,412	14	transportation, communication, utilities	9%	8%	
				wholesale and retail trade	14%	16%	
Federal spending				finance, insurance, real estate	18%	19%	
Total expenditures, 1998 (millions)	$55,830	$1,453,884	6	services	21%	20%	
R&D obligations, 1997 (millions)	$4,850	$68,424	3	government	18%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by state, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	4,849,753	1,654,696	205,648	2,718,179	226,968	36,922	7,340	3
Department of Agriculture	10,526	799	0	82	8,743	838	64	37
Department of Commerce	17,973	6,609	0	9,061	2,263	40	0	14
Department of Defense	3,875,822	1,293,462	138,216	2,402,659	35,513	5,815	157	2
Department of Energy	91,843	11,506	61,134	7,295	8,984	2,924	0	13
Department of Health & Human Services	149,469	710	349	29,532	109,322	8,395	1,161	20
Department of Interior	93,401	91,793	0	41	1,087	480	0	1
Department of Transportation	40,372	1,238	5,590	20,795	6,268	600	5,881	4
Environmental Protection Agency	18,866	0	0	12,697	3,012	3,157	0	5
National Aeronautics & Space Admin	490,543	245,167	0	212,567	19,915	12,817	77	6
National Science Foundation	60,938	3,412	359	23,450	31,861	1,856	0	12
State rank, total	3	3	8	3	18	15	5	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Washington

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	12,919	483,162	14	Total R&D performance, 1997 (millions)	$7,543	$199,110	9
Doctoral engineers, 1997[1]	2,474	97,075	13	Industry R&D, 1997 (millions)	$6,610	$150,329	7
S&E doctorates awarded, 1998[1]	449	27,272	21	Academic R&D, 1997 (millions)	$508	$23,740	13
of which, in life sciences	30%	25%		of which, in life sciences	66%	56%	
in engineering	19%	22%		in environmental sciences	11%	6%	
in social sciences	14%	15%		in engineering	9%	16%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	1,073	37,928	9	expenditures, 1996 (millions)	$3,450	$189,626	20
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	795	35,413	12
in doctorate-granting institutions	5,777	424,650	26	Patents issued to State residents, 1998	1,776	80,287	13
Population, 1998 (000s)	5,689	274,153	15	Gross State product, 1997 (billions)	$172	$8,152	14
Civilian labor force, 1998 (000s)	3,039	139,125	15	of which, agriculture	2%	2%	
				manufacturing, mining, construction	18%	23%	
Personal income per capita, 1998	$27,961	$26,412	11	transportation, communication, utilities	9%	8%	
				wholesale and retail trade	17%	16%	
Federal spending				finance, insurance, real estate	18%	19%	
Total expenditures, 1998 (millions)	$31,186	$1,453,884	16	services	22%	20%	
R&D obligations, 1997 (millions)	$1,226	$68,424	16	government	14%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	1,226,154	167,356	143,527	451,601	344,568	114,787	4,315	16
Department of Agriculture	35,561	20,384	0	164	14,754	249	10	12
Department of Commerce	60,774	54,471	0	2,299	3,619	75	310	4
Department of Defense	427,471	74,735	4,739	318,450	28,855	692	0	19
Department of Energy	180,884	0	131,498	30,451	18,687	248	0	9
Department of Health & Human Services	364,610	5,019	7,103	17,037	221,177	111,318	2,956	8
Department of Interior	12,010	10,337	0	14	1,614	0	45	11
Department of Transportation	4,258	0	0	3,056	153	155	894	23
Environmental Protection Agency	3,839	0	0	70	3,117	552	100	20
National Aeronautics & Space Admin	89,007	2,371	155	77,868	8,553	60	0	12
National Science Foundation	47,740	39	32	2,192	44,039	1,438	0	16
State rank, total	16	16	10	16	10	7	12	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

West Virginia

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	1,977	483,162	45	Total R&D performance, 1997 (millions)	$427	$199,110	40
Doctoral engineers, 1997[1]	351	97,075	41	Industry R&D, 1997 (millions)	$233	$150,329	40
S&E doctorates awarded, 1998[1]	101	27,272	40	Academic R&D, 1997 (millions)	$64	$23,740	47
of which, in life sciences	36%	25%		of which, in life sciences	45%	56%	
in engineering	25%	22%		in engineering	22%	16%	
in psychology	17%	13%		in environmental sciences	12%	6%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	18	37,928	49	expenditures, 1996 (millions)	$891	$189,626	41
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	16	35,413	51
in doctorate-granting institutions	2,705	424,650	38	Patents issued to State residents, 1998	189	80,287	41
Population, 1998 (000s)	1,811	274,153	36	Gross State product, 1997 (billions)	$38	$8,152	40
Civilian labor force, 1998 (000s)	800	139,125	39	of which, agriculture	1%	2%	
				manufacturing, mining, construction	30%	23%	
Personal income per capita, 1998	$19,362	$26,412	50	transportation, communication, utilities	12%	8%	
				wholesale and retail trade	14%	16%	
Federal spending				finance, insurance, real estate	11%	19%	
Total expenditures, 1998 (millions)	$10,697	$1,453,884	37	services	17%	20%	
R&D obligations, 1997 (millions)	$193	$68,424	37	government	14%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	193,061	86,663	30,813	39,734	23,560	10,942	1,349	37
Department of Agriculture	20,111	15,345	0	0	3,491	1,240	35	27
Department of Commerce	1,496	1,021	0	0	0	475	0	35
Department of Defense	15,575	302	0	7,875	3,829	3,569	0	41
Department of Energy	69,300	41,668	0	22,762	3,606	1,264	0	15
Department of Health & Human Services	31,646	21,795	0	1,050	7,880	0	921	38
Department of Interior	6,747	6,532	0	8	112	0	95	22
Department of Transportation	1,491	0	0	941	252	0	298	33
Environmental Protection Agency	0	0	0	0	0	0	0	na
National Aeronautics & Space Admin	11,334	0	0	7,020	4,130	184	0	29
National Science Foundation	35,361	0	30,813	78	260	4,210	0	21
State rank, total	37	24	14	34	47	26	33	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Wisconsin

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	7,945	483,162	22	Total R&D performance, 1997 (millions)	$2,256	$199,110	23
Doctoral engineers, 1997[1]	1,369	97,075	22	Industry R&D, 1997 (millions)	$1,707	$150,329	19
S&E doctorates awarded, 1998[1]	641	27,272	13	Academic R&D, 1997 (millions)	$497	$23,740	14
of which, in life sciences	28%	25%		of which, in life sciences	61%	56%	
in engineering	21%	22%		in engineering	12%	16%	
in social sciences	18%	15%		in physical sciences	8%	10%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	649	37,928	18	expenditures, 1996 (millions)	$3,914	$189,626	17
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	285	35,413	25
in doctorate-granting institutions	7,989	424,650	18	Patents issued to State residents, 1998	1,567	80,287	16
Population, 1998 (000s)	5,224	274,153	18	Gross State product, 1997 (billions)	$147	$8,152	19
Civilian labor force, 1998 (000s)	2,952	139,125	16	of which, agriculture	2%	2%	
				manufacturing, mining, construction	32%	23%	
Personal income per capita, 1998	$25,079	$26,412	23	transportation, communication, utilities	7%	8%	
				wholesale and retail trade	15%	16%	
Federal spending				finance, insurance, real estate	16%	19%	
Total expenditures, 1998 (millions)	$21,883	$1,453,884	24	services	17%	20%	
R&D obligations, 1997 (millions)	$332	$68,424	27	government	11%	12%	

NOTE: Rankings and totals are based on data for the 50 states, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	332,214	42,606	0	28,994	247,731	8,721	4,162	27
Department of Agriculture	35,637	23,739	0	26	11,789	83	0	11
Department of Commerce	4,040	590	0	1,666	1,784	0	0	28
Department of Defense	21,921	353	0	11,743	8,625	0	1,200	39
Department of Energy	17,248	0	0	213	17,035	0	0	27
Department of Health & Human Services	170,359	20	0	4,600	155,890	8,638	1,211	18
Department of Interior	17,156	16,895	0	4	244	0	13	7
Department of Transportation	3,787	1,009	0	41	1,511	0	1,226	25
Environmental Protection Agency	2,349	0	0	0	1,901	0	448	24
National Aeronautics & Space Admin	19,377	0	0	10,096	9,281	0	0	22
National Science Foundation	40,340	0	0	605	39,671	0	64	18
State rank, total	27	34	na	37	16	28	14	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

KEY: FFRDC = federally funded research and development center; SBIR = small business innovation research; na = not applicable

SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".

Prepared on March 21, 2000

Wyoming

Science and Engineering Profile

Characteristic	State	U.S.	Rank	Characteristic	State	U.S.	Rank
Doctoral scientists, 1997[1]	856	483,162	51	Total R&D performance, 1997 (millions)	$87	$199,110	50
Doctoral engineers, 1997[1]	108	97,075	51	Industry R&D, 1997 (millions)	$28	$150,329	49
S&E doctorates awarded, 1998[1]	54	27,272	47	Academic R&D, 1997 (millions)	$48	$23,740	50
of which, in life sciences	24%	25%		of which, in life sciences	37%	56%	
in physical sciences	20%	14%		in environmental sciences	24%	6%	
in environmental sciences	20%	3%		in engineering	15%	16%	
S&E postdoctorates, 1997[1]				Higher education current-fund			
in doctorate-granting institutions	72	37,928	41	expenditures, 1996 (millions)	$305	$189,626	52
S&E graduate students, 1997[1]				Number of SBIR awards, 1990-98	23	35,413	49
in doctorate-granting institutions	946	424,650	49	Patents issued to State residents, 1998	45	80,287	51
Population, 1998 (000s)	481	274,153	52	Gross State product, 1997 (billions)	$18	$8,152	50
Civilian labor force, 1998 (000s)	258	139,125	52	of which, agriculture	2%	2%	
				manufacturing, mining, construction	41%	23%	
Personal income per capita, 1998	$23,167	$26,412	35	transportation, communication, utilities	13%	8%	
				wholesale and retail trade	10%	16%	
Federal spending				finance, insurance, real estate	11%	19%	
Total expenditures, 1998 (millions)	$2,743	$1,453,884	52	services	10%	20%	
R&D obligations, 1997 (millions)	$28	$68,424	52	government	13%	12%	

NOTE: Rankings and totals are based on data for the 50 States, District of Columbia, and Puerto Rico. Reliability of the estimates of industry R&D and of doctoral scientists and engineers varies by State, because the sample allocation was based on sector, not geography. The rankings do not take into account the margin of error of estimates from sample surveys.

[1] Data on graduate students, doctoral scientists and engineers, and postdoctorates include all graduate degree (except M.D.) candidates and recipients in S&E fields, including health fields. Data on doctorates awarded do not include health fields.

Federal Obligations for Research and Development by Agency and Performer: Fiscal Year 1997

Agency	Performer							
	Total	Federal Intramural	All FFRDCs	Industrial firms	Universities & colleges	Other nonprofits	State & local government	State rank, total
	[In thousands of dollars]							
Total, all agencies	28,368	8,720	0	675	16,169	2,469	335	52
Department of Agriculture	7,243	4,555	0	0	2,688	0	0	41
Department of Commerce	396	0	0	0	396	0	0	43
Department of Defense	1,889	397	0	113	1,379	0	0	52
Department of Energy	4,649	0	0	50	2,080	2,469	50	35
Department of Health & Human Services	1,162	0	0	99	1,037	0	26	52
Department of Interior	3,913	3,768	0	0	145	0	0	38
Department of Transportation	359	0	0	0	100	0	259	50
Environmental Protection Agency	602	0	0	0	602	0	0	42
National Aeronautics & Space Admin	616	0	0	125	491	0	0	50
National Science Foundation	7,539	0	0	288	7,251	0	0	45
State rank, total	52	49	na	50	49	41	50	na

NOTE: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for the 50 States, District of Columbia, and Puerto Rico.

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SOURCES: Prepared by the National Science Foundation/Division of Science Resources Studies. Data compiled from numerous sources -- see the section, "Data Sources for Science and Engineering (S&E) State Profiles".